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THOS. F. RUMBOLD, M. D.,
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HIRAM CHRISTOPHER, M. D.,
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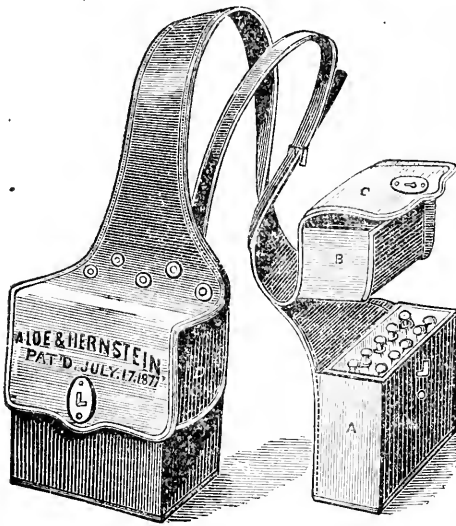
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Notice to Contributors and Correspondents.

Contributions of original articles are invited from all parts of the country. The publishers offer all facilities for illustration by wood cuts or lithographs of first-class workmanship, at their own expense. At their request authors will be supplied without charge with a limited number of copies containing their articles; extra copies printed separately can be furnished only at the expense of the authors. Declined communications are preserved for six months, and will be returned within that time, on application and transmission of the necessary postage.

Articles intended for publication in the next number should be forwarded one month prior to the date of publication. They must be contributed to this Journal exclusively.

All communications, letters, remittances, books for review, etc., should be directed to THOS. F. RUMBOLD, M. D., 1225 Washington Avenue, St. Louis.

Foreign exchanges and books for review should be sent under cover to Messrs. Williams & Norgate, 11 Henrietta Street, Covent Garden, London; or to Herr B. Hermann, Leipzig; or M. Charles Reinwald, 15 Rue des Sts. Peres, Paris.

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Original Contributions.

ARTICLE XXIX.

GENESIS.—IV. By HIRAM CHRISTOPHER, M. D., of St. Louis.

The argument from design is an old one, but none the weaker on that account. It proves that intelligence lies behind design. The watch, for instance, was designed to note the hours of the day, and it does this by virtue of its mechanism. The motive power is the spring. The mechanism properly adjusted will accomplish the object designed. But the watch did not make itself—did not originate spontaneously. Nor does the spring move the mechanism of its own will. Elasticity is a physical property of the steel. The wisdom of the designer is displayed in the proper use of his material. Such a use of instruments is an evidence of intelligence. Much more is the preparation of the material of the instruments. Had man never come upon the earth, the vast deposits of mineral could not prove design, nor be regarded as prophetic of his advent. To one capable of appreciating their uses, and who has a knowledge of the beings then on the earth, their existence is the clearest evidence of design. It could not possibly have required less intelligence to design these uses than it has required to detect and apply them. Now, if the intelligence which has detected the use of mineral

substances, and applied them to the wants and comforts of mankind, is the outcome of molecular action of "the cosmic vapor," may we not inquire what was the source or origin of the intelligence that placed these substances upon the earth, and adapted them to their special uses? And further, if the action of the molecules of matter had the power to give origin to the psychical faculties of animals; if intelligence comes from the natural or regular action of the molecules of matter, can we suppose that it did not require intelligence to give them this power, and to conceive and design a mechanism that could produce such a result? Either this, or we must affirm that something can arise spontaneously from nothing; that a stream may rise higher than its fountain; or that a conclusion can be drawn from premises with which it has no connection or relation whatever. When we can generate intelligence from heat, or light, or electricity, or crystallization, or any other physical force, it will then be rational to suppose that the intelligence of man is the legitimate result of molecular action, so potent in "the cosmic vapor," or "fires of the sun." But intelligence has never been discovered in salts or crystals, however complex or beautiful. Unmistakable psychical phenomena appear only in the higher forms of animals, whose structure and differentiation of organs and functions are in a corresponding measure and degree to these phenomena. Such a complicated machinery as a living being, with all its harmonic development, is a much stronger evidence of intelligence and design than is any mechanism ever designed and constructed by men. If, then, a human mechanism is an evidence of intelligence, much more must the series of organized beings be a proof of intelligence and design. The scientist of the materialistic school ascribes living organisms to the vital force, and very justly, when we have a proper conception of the vital agent, but very unscientifically, if this agent be specifically the same as to nature as the physical forces, heat or chemical affinity, or the force of crystallization. There are no traces of design in crystals. There is no purpose to be attained by their structure. There is no trace of *will* in any physical force; but the simplest organism develops design in the phenomena of growth and reproduction. When phenomena are so widely different, and specifically and categorically distinct, the source and nature of their cause must be equally distinct and different.

The question of spontaneous generation can be best deter-

ined at the microscopic extremity of the organic kingdom; for here the two kingdoms of nature are in the closest proximity; *the real nature of the cause or basis of psychical phenomena*, at the other, in the organism of man, in whom psychical faculties reach their highest organic perfection, and attain the plane of their highest capabilities through a material body. That there is in man anything more than what is purely animal, the legitimate production of the vital or organizing agent, the phenomena presented by his organism do not inform us. If he has what the world call and believes to be an individual spirit, separable and distinct from his organism, and capable of an existence, and actually existing, after the death and destruction of the organism, is a matter in regard to which we may form conjectures, but of which we can have no positive information from the light of nature. So far as the question under consideration is concerned, it is not necessary to know. It is enough for us to know, and have admitted by materialists, that man presents us with a high grade of psychical faculties, and a wide range of psychical phenomena; and that these are the production of the vital agent. If he is but an animal, our argument will be the stronger; but so far as our present purpose is concerned, we care not to know whether he is more or not. Animals afford us all the data we need. They have psychical faculties the same in every respect as those of man, and they are confessedly the outgrowth or production of the vital force. As respects these faculties we may look on man as but an animal and no more. The degree or grade of their development does not constitute a specific difference as to nature or origin. The modern scientist, indeed, looks on man as but an animal, and our argument does not require that we shall remove him to a higher category. In the present discussion, therefore, we look on the psychical phenomena of man as resting on the same basis as do those of the animals below him. This is as far as the light from natural phenomena may lead us.

Now, if man be the creation of physical forces, it is evident that there can be nothing in him which was not potentially in these forces. If he presents psychical phenomena, then is intelligence but latent in these forces. This is what the scientists of "the cosmic vapor" school believe and teach, holding that, as by the force of crystalization crystals are produced, so by the vital force living organisms are produced; that the phenomena are different only because the action of the forces differ. In one

case we have crystals and in the other living organisms. This is a strange conclusion from the phenomena presented by crystals and living organisms. In the first we have invariably uniformity of structure, though complex in one sense, yet essentially simple. They have no organs nor functions beyond physical properties. On the other hand living organisms are distinguished by features of a reverse character. In these are found growth and increase in every direction; and in the highest forms phenomena appear which are entirely absent from the lowest. This fact cannot be explained on any hypothesis that does not ascribe to the vital agent a nature specifically different and distinct from that of any physical force.

Man is confessedly the most completely differentiated and the most perfectly developed living organism of the entire series. He is the climax of organic possibilities. He combines and epitomizes all the differentiations that preceded him. He is the microcosm of the macrocosm. This has been demonstrated from the structure of his organism. Hence in him organs and functions are complete as to the degree of possible development. In him the functions of organic structure have attained their possible limits. Therefore mind in him has reached its highest possible development through or in an animal organism. To the discharge of this function the brain is assigned as the instrument. Mind is but a phenomenon or attribute, not the entity itself. There is a something that thinks, but it is not the brain. When the body is dead the brain, though intact, is no longer a thinking instrument, or a thinking power. If it thought, it ought to think until disintegrated. But no one claims that the brain thinks. It is a something that is foreign to the organism that does this.

Mind increases, and grows, and enlarges. This phenomenon appears under two aspects: 1st. It is developed *patri passu* with cerebral development of the animal. 2nd. It grows or increases in the individual animal. The first we call organic, because dependent on the development of the cerebral organ. In the second growth is individual, because intelligence in the individual is in a certain sense individualized; the personal intelligence operates only through the personal organism, and grows by knowledge. Hence we find intelligence increasing in the individual. The individual or personal mind grows and enlarges. This is an inherent attribute. Mind grows, as I have said, because such is its nature. The being that thinks, does so because

such is its nature. It grows like its organisms—from within outward. It grows by the assimilation of the proper nutriment. It imparts the power of growth to the organisms which it creates. Hence *their* growth. That which thinks, feeds on thought, just as the living cell feeds on organized pabulum. It generates and throws off thought as its natural product, as “the formed matter” proceeds from the living processes of living matter. Hence the living processes of living matter, or the living organism, are but the counterpart of the natural processes that take place in spirit substance that gives origin to living organism. The visible represents the invisible. The phenomena of the world are only the avenues by which mind finds access to mind; by which mind here looks into mind beyond, and reads the thoughts and purposes of the mind that designed and executed this wonderful fabric we call nature.

That the phenomena of nature display mind there can be no doubt. They put the highest powers of man to the severest test to read and understand them. Great as is the work already accomplished by men, they are still but on the threshold of what will yet be known. If the highest capacities of man have been severely tested by the little that he has already attained—and we may make this little as much and great as we wish—what must be the capacity, and range, and power of the Mind which designed and executed this wonderful and complex fabric of mixed being? In the phenomena of the world that great Mind has expressed his thoughts, and when man has learned to read and understand these, he will know what that mind thought and designed. The task has not been an easy one. In these phenomena man has found a foreign language, and it was long before he could learn its symbols, and understand their meaning and power. In these phenomena, moreover, there is no apparent connection or continuity. Our words are as connected as our thoughts to those who understand our language; but the language of natural phenomena is the wildest jargon until its symbols are mastered. These phenomena are not methodically, or systematically arranged. Though they have a connection and close dependence on each other, yet their relation is not readily perceived or discovered. It is known only after close, patient, and protracted investigation, and even then we attain but an imperfect view of the thoughts of that being who speaks through these phenomena.

Since the phenomena of the world appear so chaotic, and seen

distributed over the world without order or purpose, it is no small work that men have done to show how these phenomena stand related to each other, and each to all; how under all this seeming chaos and purposeless mingling of phenomena, there lies one of the most beautiful systems imaginable—one of the grandest displays of order, design and purpose, that has ever greeted the vision of the human mind! The grasping and grouping of a large number of facts and numerous phenomena, and presenting these in a connected view and systematic relation or arrangement—the classification of all these in order and systems, are evidences of mind of the highest order and cultivation. If, then, the mind of man has done this work after the most laborious and protracted investigation, can there be any doubt as to the fact that mind is the author of these systems in nature? It cannot be that the author of this wonderful fabric is less than the student of this work; that the effect can be greater than the cause. As man has mind, so must the author of the world be an intelligent being. This conclusion is evident and incontrovertible, necessary and imperative. It was a great achievement to show the natural classification of the animal kingdom; but it was a much greater work to show that all the animals that have lived, from the beginning to the present, can be comprised under four general heads or branches, and thirteen or fourteen classes, or subordinate branches. Such harmony and consistency, continuing through so many vast ages, and in the midst of almost infinite diversity of species, could not have been the result of chance or accident, or of dead matter and its forces.

The human mind has followed the footsteps of the life-agent from the earliest period of living organisms on the earth; has traced them through every stratum of the earth's crust; and in the end has gathered up all the facts and arranged the vast mass in order and system, and in this shown how the great Worker has developed the systems of organized beings, and in the structure of man epitomized all that preceded him. The macrocosm appears epitomized in the microcosm. The student sees in the organisms that preceded man a system complete, less the supplement that the human organism presents; and in the latter he sees the capital and the epitome of all that went before. By this great work the human mind has entered the mind of the great Worker, and there read the thoughts and purposes developed in the end by the appearance of man. In this vast and beautiful

system of organized beings the human has read the divine mind; has grasped its thoughts and purposes, and thus shown and proved its identity with the mind that conceived and executed this vast system, whose initial point was so remote that the science of numbers cannot calculate its distance, and yet so completely epitomized by the present inhabitants of the earth, that the whole appears in the present. "In the prosecution of modern physical sciences" man has demonstrated that human reason is congruous with that reason of which the material universe is the product; for when we say (within certain limits) we understand the scheme of the world as to its structure and as to its dynamics, we affirm that the mind which understands and the mind which has produced this scheme of things, are in unison, or that they are convertible the one into the other."* That is to say, that the mind of man and the mind of the Creator are of the same nature or essence; that mind, whether human or divine; whether human or purely animal, is the attribute of the same substantial essence, and rests on, as its basis, the same nature and entity. This being so, the conclusion is unquestionable, and the position impregnable, that the life-agent which has produced, in living organisms, psychical phenomena of the same nature, essence, and kind as those presented by mind wherever existing, can be none other than the one great Spirit who is the author of life wherever existing, and in whatever existing. And as no man has ever shown, or even attempted to show, that physical forces are either of a psychical nature, or capable of giving rise to physical phenomena in the faintest degree, we can but conclude that these phenomena owe their existence to a power or agent that is wholly supernatural; to a power foreign to, and wholly independent of, the realm of the inorganic world. Therefore, as we may justly ascribe to the same source or origin the motion, growth, and reproduction of the simplest living organism and the psychical phenomena of animals; and as man's mind is the same in nature, essence, and kind, as the Mind which conceived and executed this vast fabric of matter and life, we reach the indisputable conclusion that this world and all that is in it, owe their existence to a Power intelligent, and wholly foreign to matter and its forces. Such is really the view of Dr. Beale in the work which suggested these papers. On page 132

*Taylor's *World of Mind*, p. 327.

he says: "For behind all this structure, operating now one part of the mechanism, and now on another, is *mind*, the *will*, the *thinking power itself*," and then asks, but does not answer, "What is the nature of this [power,] and how does it act upon the mechanism?" What its nature is we have approximately, at least, determined; *how* it acts on the organism—how mind and will and thinking are manifested in and by such mechanism as the animal organism, we cannot determine. We know nothing about it, and probably, if not certainly, never will know. As a fact, however, it is no more difficult of belief, or of being understood, than the action of physical forces on matter. The demonstration of the existence of psychical agent or power is no more difficult than the demonstration of the existence and action of physical forces. The existence of each is proved by the phenomena which they display. But *how* either acts on matter is a matter of no practical moment. The fact exists; and though a knowledge of the *modus operandi* of the action either of spirit or of the forces of nature on matter, be impossible, and may ever be so, this ignorance will not alter or annihilate the facts.

But the *mental* phenomena of animals do not exhaust the resources of our argument. These are not the only manifestations or attributes of psychical beings, such as we have in the higher species of animals, and in man when contemplated as but an animal. There is in animals not only a *mental* nature; but also a *moral* nature. The modern scientist makes a distinction between a mental and moral action. The distinction is not arbitrary. It is natural and necessary. A mental action has a moral quality or character. It is good or bad or indifferent either inherently or circumstantially. This is well understood and believed as respects the action of man; but it may seem startling to some to ascribe a moral nature to the actions of animals. It is, nevertheless, true that animals have a *moral* nature, and this is an absolutely necessary conclusion from the premises that the psychical faculties of animals arise, or rest on, the same nature or basis as do the psychical faculties of other intelligent beings. In man the moral nature is so highly developed and conspicuous that some have regarded it as peculiar to man, and differentiative of the human species. But this is an exaggeration of the difference between men and animals of the higher species; but so long as the modern scientists regard man as the product of a physical force, they must also regard him as but an animal. If

but an animal, and he has a moral nature, this fact is all our argument requires. If but an animal, then there is in animals a moral nature, and it is as much the duty of the scientist to account for this as for any other phenomenon.

But animals have a moral nature. There can be doubt of this; for when they "fight with one another, when they associate for a common purpose and when they warn one another in danger when they come to the rescue of one another, when they display pain or joy, they manifest impulses of the same kind as are considered among the moral attributes of man. The range of their passions is even as extensive as that of the human mind, and I am at a loss to perceive a difference in kind between them, however much they may differ in degree, and in the manner in which they are expressed. The gradations of the moral faculties among the higher animals and man are, moreover, so imperceptible, that, to deny to the first a certain sense of responsibility and consciousness, would certainly be an exaggeration of the differences which distinguish animals and man."* Since, then, animals have a moral nature and display, in some instances, moral emotions of a very marked degree of strength and permanency, we must conclude, if the doctrine of evolution be true, that love and hatred, joy and sorrow, justice and injustice, mercy, compassion, benevolence and such like, were like art and science, poetry and painting, philosophy and oratory, "potential in the cosmic vapor," or "latent in the fires of the Sun." Out of heat, light and chemical affinity have come the mental and moral faculties and emotions of man and animals! Whence then, the mind and wisdom, the love and mercy, justice and holiness of the Great Author of all? Is the love which attracts two individuals a modified chemical affinity? Is hatred which repels them, allied in nature to electricity? Is the social affection only a mode of cohesion? the glow of gratitude a kind of heat? Is there no distinction in any direction except that of degree, mode or form? All these things must be true, if they are but the ultimate outcome of evolutionary forces. There must be but one unbroken series of phenomena, all arising from the same or kindred forces, if psychical phenomena, of every kind and degree, are but the ultimate outcome of the power of physical agents. The modern scientist sees no further back than his

Agassiz's *Essay on Classification*, pp. 96-97.

cosmic vapor, and no other power, than what was in that fiery mist. All that exists was potentially there. Out of that vapor have come metals, and salts, and crystals; plants and animals, and all mental and moral phenomena! What a herculean faith! It is no longer a hyperbole of speech to say that the faith of some men may remove mountains. Here we have a faith that believes that water will flow upward! That a stream can rise above its source.

ARTICLE XXX.

THE PRESENT STATUS OF THE PATHOLOGY OF PHTHISIS PULMONALIS.—By J. HILGARD TYNDALE, M. D., of New York City.

CROUPOUS PNEUMONIA.

The term "croupous" as is known, is used in connection with a number of diseases, as of the larynx, lungs and kidneys. A croupous inflammation is defined by Flint, to be one "embracing affections differing widely in pathological character and importance." Flint further describes all croupous affections as being characterized by an exudation of lymph. It is well to have in mind that this exudation is *upon* the surface of membranes in contradistinction to diphtheritic exudation which takes place within the tissue itself. German authorities, therefore, invariably define croupous inflammations as characterized by an exudation, which is rich in fibrine, upon the surface of mucous membrane. Latterly the identity between croupous and diphtheritic exudations has been sought to be established, and in a recent publication by Prof. Jacobi of this city, this point is ably discussed, at least so far as laryngeal troubles are concerned. But to dwell upon this point, would take us too far from our real subject.

Again one of the pregnant questions of the day is, whether or not croupous pneumonia is an *acute infectious disease*, running as it does a decidedly typical course.

Juergensen makes the following declaration: "Croupous pneumonia is a disease affecting the system generally, not a particular locality. Inflammation of the lung is merely a prominent symptom. The phenomena of the disease cannot be accounted for by the local conditions."

Briefly let me give the evidence in favor of the above as gathered from this and other sources, and from the etiology, anatomy and pathology of the disease:

1st. The seasons at which pneumonia occurs differ from those of inflammatory conditions of the lung. It ranks fairly as an endemic, occurring with a certain regularity at certain seasons of the year.

2nd. During the whole course of the disease there is no constant relation between the degrees of fever and the local symptoms; consequently the length of the fever is not to be credited to the local conditions.

3rd. The decidedly typical course.

4th. Inflammation of the lung accompanying typhoid fever and other infectious diseases is not croupous pneumonia; therefore croupous pneumonia is never a secondary, a consecutive inflammation.

5th. Death is often due to paralysis of the heart, as it occurs in other acute infectious diseases, where the quantity of infection can be estimated in a measure by its effect upon the innervation of the heart.

6th. Attempts to abort, to cut short the course of croupous pneumonia have tended only to enfeeble the already weak powers of resistance of the patient. In view of the numerous discussions of late in regard to this point, I regret that we cannot now go further into this.

The inflammatory process itself is one affecting the alveoli and bronchi, in the course of which an exudation *rich* in fibrine is poured out upon the surface of the mucous membrane and then *coagulates*. No one has ever attempted to establish the existence of a croupous pneumonia running a chronic course, and I wish this point especially to be borne in mind, when I come to speak of the possible terminations of croupous pneumonia and their results.

The croupous process is a truly superficial one. Indeed, quite as much as the catarrhal process. While in catarrh we have transudation of serum from the blood, in croup there is *added* an abundance of fibrine. You will find it stated by most authorities that the exudation *raises* the epithelial layer, thus doing away with the latter. This is erroneous. It has been established long ago, that the fibrine *passes over* the epithelium, as any ordinary secretion, and the epithelial layer is lost by subsequent de-

generation. Niemeyer had always held that an exudation rich in fibrine and quick to coagulate is deposited upon the surface, enclosing within itself the normal epithelium and newly formed cells. The fact is, the epithelial layer covered by the fibrinous exudation undergoes no other changes save œdematous swelling, opacity and incipient fatty or mucous degeneration. So much for croup in general.

Passing to the pathology proper of croupous pneumonia, we find it almost invariably involving the greater portion of a lung, beginning mostly at the root, involving the lower lobes and thence passing to the upper lobes. And right here is a chief distinction between the characteristics of croupous and catarrhal pneumonia. Both are superficial. In the catarrhal form, however (*vide* my second article), the process is one derived from the smaller bronchi and hence *only* lobular, while croupous pneumonia, involving the lung parenchyma proper, is *diffused* as well as lobar, involving the bronchi only as a secondary process.

Croupous pneumonia has three distinct stages. It will be necessary, for completeness sake, to dwell upon each of these stages in order to arrive at safe conclusions regarding the final termination.

In the first stage, that of *inflammatory determination or engorgement*, the lung parenchyma is of dark red color, is heavy and harder and has lost its elasticity. On section, the cut surfaces present a dark appearance, and blood flows in abundance, together with serous fluid more or less frothy. In speaking of the possibility of considering croupous pneumonia as an exaggerated catarrh, Buhl says: "When we see in catarrh serous exudation, superadded to the normal secretion of the mucous membrane, the same addition is present in croup of the pulmonary alveoli in the shape of gas and watery vapor, changing at once into perfect lymph. Looking at it from this standpoint, the inflammatory engorgement of the lungs, characterized by transudation of bloody serum, is analogous to catarrh of the bronchial mucous membrane, and if this goes on gradually, the exudation contains more and more fibrine, the process is aggravated into croup." I quote the above merely as an individual opinion. It is neither an accepted nor an established fact.

The passage from the state of engorgement to that of hepatization is always of short duration, commonly in one day. The alveoli and bronchi are now filled with coagulated fibrine mixed

with blood (giving it the red color); the air has disappeared from the alveoli. Hence the lung is solidified and the characteristics of croupous pneumonia are established. The cut surfaces present a granular appearance, most plainly observable in the larger alveoli. These granulations are small, firm props of coagulated fibrine. Flint says they are composed of amorphous fibrine or lymph in a granular form, epithelium, fatty granules, some blood-disks and leucocytes. These coagulated alveolar contents press upon the parenchyma, infiltrated with serum (oedematous), and this pressure is what causes the croup-props to bulge out as granular matter, and they are in this shape true mouldings of the alveoli and infundibula.

In this connection it is well to point out another distinction between croupous and catarrhal pneumonia. As the whole lobe of the lung has materially increased in weight and volume, the pleura covering it, is likewise tense and oedematous and likewise becomes covered with transuded fibrine. Serous effusion also supervenes. This form of pleuritis is peculiar to croupous pneumonia and totally wanting in the catarrhal form.

In the further course of the disease the red color of hepatization gives place to a gray or yellowish appearance, the lung texture remaining the same. I think this is due to the usual *changes in the hæmatin* of the red blood-corpuscles, as commonly seen in superficial ecchymoses, though I fail to find this stated by any author. This intermediate discoloration is sometimes denominated *gray and yellow hepatization*.

If *resolution* supervenes (after the seven days of hepatization), this is effected by fatty degeneration of fibrine and young cells, possibly also of mucous degeneration. There is softening, expulsion as well as re-absorption. Most authorities allow that these processes go on during restitution in all parts of the diseased tissue simultaneously. Buhl, however, very ingeniously demonstrates the following facts: The *alveolar epithelium* takes the lead in fatty degeneration, becoming granular, and by this process the croupous props are detached and raised from the inner alveolar walls. The *bronchial vibrillated epithelium*, on the contrary, largely undergoes mucous degeneration; likewise, the croup props become detached and softened. The quantity of mucus formed in the smaller bronchi is always large. Now in order to expedite excretion, there is a necessary vibratory motion, a narrowing and widening of air passages, in inspiration

and expiration, and sound elasticity of the lung parenchyma. All these conditions are rendered nugatory by dense hepatization. The first step in actual regeneration is an *active cell proliferation* below the detached alveolar and bronchial epithelium. It is not until this condition is fulfilled, that vibratory motion can be possible, and this is confined to the bronchi. In order to expectorate the alveolar portion of the deposit, the factors of forcible contractility of the air-passages, as well as elasticity of the lung parenchyma are required, yet these forces have been and will remain paralyzed for some time to come. Moreover, the sputa of pneumonia are catarrhal products of the bronchi, mixed with fibrine and reddened by the admixture of red corpuscles (rusty colored sputa), all derived from the bronchial mucous membrane, almost exclusively. The deduction from the above is, that *the whole of the hepatized lung tissue proper, undergoes resolution almost entirely by re-absorption of the softened alveolar props on the spot.* This fact is important in considering further terminations of croupous pneumonia.

Resolution, when it takes place, is always complete. This proves croupous pneumonia to be a superficial inflammation only, spending its force upon the alveolar epithelium, but not penetrating into the lymphatics. Keep this fact in mind.

On the other hand, the process may pass into the third stage of destruction, so-called gray hepatization or purulent infiltration, chiefly caused by lack of the general powers of resistance and weakness of the heart's action. The pathological anatomy of these changes does not differ from those of resolution, save in that on account of the enfeebled powers of resistance, the regenerative processes do not keep pace with those of the degenerative, or the former may be even wanting altogether. The volume and weight of the affected part remains unchanged. The granulations (croupous props) are now readily pressed out and disappear. The parenchyma remains not only anæmic and devoid of air, but is much softened, breaking down on slight pressure. Reddish gray thick pus flows freely over the cut surface and may be readily pressed out in large quantities. But the minute structure of the lung is still unchanged, and at this stage a late resolution is still possible. Death usually ensues (as late as the tenth day) but in a few cases a small amount of surplus vitality causes the products to be absorbed, as in the hepatized condition. This, of course, is immediately consequent upon the disappearance of the croupous props. But if absorption fails, the formation of pus (as above stated), true purulent infiltration will lead to death. An important point in this connection is the presence of pus corpuscles in the lung structure itself. The pleura takes part in this purulent infiltration and its effusion, consequently, becomes purulent. Remember the point in the beginning of this paper, viz: the truly superficial character of

croupous pneumonia, wherein the parenchyma was merely *oedematous* and now by its *purulent infiltration* forms, as it were, a bridge to *interstitial* forms of inflammation, and this is in itself sufficient to lead to the formation of *abscess of the lung*. Abscess of the lung may occur during life, but then it may be looked upon as a decidedly slow and localized process, taking weeks for its formation, since rapid infiltration would kill rapidly. Moreover, in order to form a perfect abscess, the neighboring parts must be undergoing resolution and must be healing.

I find it necessary to dwell for a few moments upon the possible ending in pulmonary gangrene. This occurs in croupous pneumonia (it may occur suddenly by thrombosis, etc.,) in the stage of red hepatization. Stagnation and numerous thrombi in the branches of the bronchial arteries, which carry on the nutrition of the lung, causes the flow of blood to be cut off from the inflamed parts. Cessation of nutrition and the constant presence of atmospheric air, are the factors for modification, which involves both lung structure and the infiltration. But as it may be set down as a rule that anæmia from thrombosis is nearly always a localized process in the different organs (e. g. the brain) so it is the case with the lung. The same condition and action of the neighboring parts, as just spoken of in lung abscess, here supervene. Demarkation, granulation and throwing off of the mortified part, and indeed in both abscess and gangrene of the lung, the favorable termination consists of a loss of substance, in short a *cavern*. Only in case of exceptionally small loss of substance and consequent caverns of the size of a pea or a trifle larger, may cicatrization and complete closure occur. This is, no doubt, the only condition under which cirrhosis of the lung (induration) occurs as a sequel to croupous pneumonia, though some authors mention diffuse proliferation of connective tissue and emphysema as a sequel. Of this there is no proof.

Lastly, I return again to the important question of the possibility of croupous pneumonia leading directly to pulmonary phthisis. It will be remembered that my quotations from authors, at the beginning of this paper, are to the effect that croupous pneumonia was in itself strictly superficial. If the reader has closely followed the pathological anatomy of all possible terminations, to-wit: gray hepatization, purulent infiltration, abscess and gangrene, it will have become apparent that *one* of two results *alone* is possible, viz: Resolution and absorption, or destruction by pyæmia or the formation of a cavern (in abscess and gangrene). The formation of a cavity, it should be remembered, is not primarily the effect or a product of croupous pneumonia, for these products have by this time all disappeared. These facts would seem to effectually remove any doubts as to the impossibility of a termination in caseous pneumonia, and yet, as far as I am able to ascertain, almost the majority of authors state it so. Niemeyer even mentions caseous pneumonia as of

quite frequent occurrence in this connection. He says that when the extravasated fibrine has undergone fatty degeneration and this mass is not properly supplied with serum by the alveolar walls, the fatty mass will dry and become changed into a more or less firm, yellow, cheesy mass.

Finally let me tersely recapitulate and condense the opinions of the present day in regard to the possibility of products of croupous pneumonia leading to phthisis, that you may not get confused in regard to it.

Remember always, that a rapidly destructive process, such as fatal terminations of lung inflammations, (gangrene, abscess) have no relation to phthisis. Bear this well established fact in mind : *That in order that an inflammatory process should lead to consumption, its products must have a remnant, and this remnant must undergo cheesy degeneration.* Based upon this, the only questions to be answered in relation to croupous pneumonia are : 1st. Do any remnants ever remain? 2nd. Do these remnants undergo cheesy degeneration? In regard to the first question we have exhausted the subject throughout this paper; yet once more, I condense the views of prominent observers. They are as follows : Buhl denies all possibility of a remnant, and he has many supporters. Juergensen, Rindfleisch and Rueble have taken pains to oppose this view. The views of all, however, coincide in this, viz : even if no distinct remnant remain, the inflamed parenchyma may be, to a greater or less extent, a starting point for development and contraction of connective tissue (embiosis).

Again, a number of Buhl's cases of desquamative pneumonias, may have been croupous, or croupous cases of the other authorities may have been desquamative as they are clinically hard to separate.

And thirdly the possibility is held out, that a desquamative process might follow directly in the lead of a croupous. Now all acknowledge (Buhl included) that cirrhotic conditions and desquamative pneumonia are prone to cheesily degenerate.

The second question answers itself. If remnants remain, they can readily undergo cheesy degeneration, especially while the patient is still in a debilitated condition.

Again : If croupous pneumonia is an acute *infectious* disease and never an accompaniment of other diseases, never *secondary* or consecutive, no remnant can remain for cheesy degeneration.

If on the other hand, as an ordinary inflammatory disease it runs no typical course, and if desquamative pneumonia as an independent disease is a myth (as asserted by Rindfleisch) or, if existing, it may follow in the wake of croupous pneumonia, the conditions for the remaining of remnants are given and their cheesy degeneration a natural sequence. My own belief is against this and in favor of the former proposition, the reasons for which will appear in my next paper, which will treat of desquamative pneumonia.

ARTICLE XXXI.

LITHOTOMY. A TABULATED STATEMENT OF CASES, WITH CONSIDERATIONS IN RELATION TO THE OPERATION, THE TREATMENT AND THE PREVENTIVES MOST PROMISING OF SUCCESS. BY DAVID PRINCE, M. D., of Jacksonville, Ill.

I have operated sixteen times upon fifteen persons, the youngest being 15 months, and the oldest 81 years.

My earlier experience was with the lateral method, but I became convinced by reading Allerton's account of his mode of performing the median operation, that the anatomical reasons for it were superior. My later operations have been by this method, of cutting in the raphé or median line of the perineum.

Allerton's operation, after the introduction of the staff, consists in introducing the fore-finger of the left hand into the rectum. Then a sharp pointed bistoury with edge upward is thrust in about half an inch anterior to the anus, and pushed forward until the point is lodged in the groove of the staff. The finger in the rectum prevents the accidental puncture of the wall of the cavity, and by its pressure upon the urethra with its enclosed staff, aids in inserting the point of the bistoury into the groove. The third movement consists in drawing the bistoury upward toward the operator, the point gliding along the groove in the staff for half an inch, and finally cutting the raphé to a sufficient extent as the bistoury is withdrawn. The fourth movement is the introduction of a probe along the groove of the staff, after which the staff is withdrawn and the finger is introduced into the bladder.

The finger by a rocking movement, works its way along the probe until the bladder is entered. A dilator, such as is used for the dilatation of the uterus or the female urethra, is then employed to expand the urethra to a sufficient extent to permit the entrance of the forceps. Farther dilatation is effected in the withdrawal of the forceps, after the stone has been grasped.

This is a speedy and showy operation for small stones, and it is free from the danger of excessive hemorrhage. A less speedy proceeding is thought to be preferable. The anus having been

dilated by the introduction of the fore-finger of each hand, and the staff having been introduced, an incision two or three inches in length, is made in the median line by an ordinary scalpel, reaching down to a point about half an inch anterior to the rectum. This incision is deepened by repeated strokes, and when the nail of the fore-finger of the left hand enters the groove of the staff behind the bulb, the intervening membrane is punctured by the point of the scalpel, which is then laid aside. A probe-pointed, straight bistoury is then inserted into the groove with its flat surface towards the staff above, and the rectum below, and pushed forward into the prostatic portion, but not into the bladder. The probe-pointed, straight bistoury is then inserted into the groove and pushed forward into the prostatic portion, but not into the bladder. The fore-finger of the left hand is then inserted between the staff and the bistoury and pushed forward by a rocking motion until the bladder is entered by the finger. If on attempting to pass the finger, it is found not to go forward, it should be withdrawn and the bistoury carried a little farther into the prostate guided by the groove in the staff. The finger is then returned to the prostate, and any necessary cutting is done by the bistoury as it is pressed by the finger upon its flat surface. The cutting is therefore in the side of the urethra.

It is intended that there shall be no cutting in the posterior part of the prostate.

Allerton's recommendation of a dilator has not been found necessary.

The forceps once introduced along the staff or along a probe by which the staff is replaced, affords a wedge for further dilatation as the stone is extracted within the grasp of the forceps. If a moderate pull in a vibratory manner fails to bring out the stone which has been grasped in its narrowest diameter, by the aid of the fingers of the left hand in the rectum, the probe-pointed bistoury should be passed in on the outside of the forceps, and made to divide the most resisting fibers, while they are made tense by the force applied to the forceps. In this way nothing is divided which is easily stretched or easily torn. The conversion of the median incision, into the medio-bilateral, is done with the greatest economy of tissue and without danger of subsequent pelvic abscess from the infiltration of urine into the loose cellular tissue.

If the stone is small it is not necessary to employ the forceps ;

the stone being pushed by the fingers within the rectum. Generally, however, the smooth surface of the forceps obviates the abrasion of the parts by the rough surface of the stone, and thus more than compensates for the room the instrument occupies.

With the modifications here described, the median method is applicable to the cases presenting the largest calculi which can be extracted under the pubis. In case of a large stone the operator takes sufficient time and feels his way with the forceps engaged in the wound. He carefully introduces the probe-pointed bistoury, and divides little by little, whatever affords most resistance, first on one side, and then on the other, until the stone is delivered.

The element of time is important to enable the tissues to dilate as they do in slow parturition. Haste to remove a large stone must show a loss of presence of mind or an unmindfulness of the correct theory of the proceeding.

The bladder having been found clear of stones, fragments or blood clots, a syringe with warm water having generally been employed; a cotton probang saturated with undiluted carbolic acid is mopped over the incised and the mucous surfaces.

The interior of the bladder is found to bear this application well, and very little pain is felt on awaking from the anesthesia. The local anesthesia caused by the contact of the carbolic acid may account for this. After the thorough mopping with carbolic acid, the incised and lacerated surfaces are mopped with tincture of chloride of iron, with a view to the formation of an incrustation unfavorable to the absorption of fluids.

The patient is directed to be bathed in a full length or in a sitz bath, once or oftener each day. The theory of this is, that the water of the bath enters by its gravity the urethra and the bladder, and that any material in process of decomposition is likely to be washed away. Unless resisted by the tonic muscular contraction of the bladder, the water must enter to the extent of the natural capacity, and if resisted, still enough will enter to carry away any ammoniacal urine or other causes of irritation or septic influence. The feeling of comfort from bathing is always great, and the time is anticipated with pleasure and often with impatience. Cutaneous excoriations are avoided and all fear of septic absorption is banished. No catheter is left in the wound which is protected from irritation of flowing urine by the carbolic and

iron applications, until protection is afforded by the suppuration which throws off the artificial crust.

A hypodermic injection of morphia is generally given before the patient has become fully aroused from the sleep of ether. The state of insensibility is thus prolonged. Since the adoption of this expedient, it is a rare event for a patient to complain of pain. The restlessness which prevents sleep is generally more effectually removed by a bath than by a Dover's powder.

A liberal use of quinine helps the reparative processes, and the diet should be that which agrees and furnishes the best relish. To avoid the tediousness of the detail of cases, they have been incorporated in the following table :

OPERATION.	No. Cases.	Adults.	Children.	Males.	Females.	Number of Stones.	Other Substances.
Lateral	5	4	1	5		4-1-14-3-22	one case of the bone of the male organ of the coon carried six weeks—the soft investment infiltrated with calculeous material
Lateral converted into bilateral	1	1		1		1	
Median	7	3	4	7		1-1-1-1-1-1-1-7	
Medio-bilateral.	2	2		2		1-1-5	
Vagino-vesical	1	1		1			A pen-knife carried a year and a half incrustated with calculeous material
Total	16	11	5	15	1	35	2

Sixteen operations upon fifteen persons. The infant was operated on at fifteen months and again at twenty-one months; died three months afterward. Two adult cases died at the end of a year. The other cases survived several years or are now living.

In one of the lateral operations in a gentleman 63 years of age, fourteen stones were obtained very similar to each other, weighing in the aggregate four ounces avoirdupois. The patient was able to walk a mile in five weeks from the time of the operation.

The lateral converted into the bilateral operation furnished a stone weighing four ounces avoirdupois. Five days after the operation a fistulous opening was developed which never healed. This probably resulted from a slough very much as a fistula is developed after parturition. The conversion of the lateral incision into the bilateral was done with the probe-pointed bistoury, with its flat surface to the outer surface of the blade of the forceps, the edge being turned out sufficiently to divide the most resisting tissues.

Two plastic operations were subsequently made to close the fistula, but were unsuccessful.

This patient came very near being lost by a peritoneal inflammation which supervened five weeks after the time of the operation, as the result of drafts of air from the cracks of a window.

An illustration is also afforded of the relief of irritation which follows the removal of a stone. Great prostration from vesicular inflammation was attended before the operation by a pulse of over 100. Spare diet aggravated the condition. Liberal feeding and quinine improved the condition of the patient, but the pulse would not come below 80.

The operation afforded relief from this great irritation. It follows from the consideration of which this is an illustration, that it is not advisable to wait for the complete removal of morbid general conditions. The removal of the stone is essential to this end.

This case is also illustrative of the influence of diuretic spring water. The patient consulted me six years before he submitted to an operation, and on being told that cutting would afford the only relief, he went away sorrowing. He afterward spent two years at a saline spring in Greene County, Ill., and was so much benefitted as to think he was completely recovered. He married and engaged in farming, and for three years believed himself free from the presence of a stone. Overwork brought on a vesicular inflammation, from which he found no complete relief except in lithotomy.

The rationale of the diuretic cure probably is, that the large amount of fluid holds in solution the material which would otherwise be deposited, while the surface of the stone becomes polished by its friction against the mucous membrane.

The penis bone, (of a coon) mentioned in the table, was removed from a man aged about fifty, whose story was that "a doctor had attempted to remove the gravel and had broken his instrument, leaving a part of it within the bladder," where it had remained about six weeks.

The pen-knife mentioned in the table, had been carried in the bladder a year and a half, and assumed a transverse position, so that the patient, a girl of fifteen, could not completely empty her bladder, and yet there was a constant and imperative desire to urinate.

An incision through the vagina was closed successfully by

sutures six weeks after the removal of the knife. The amount of inflammation incident to the presence of the knife did not permit an earlier attempt at closure. The restoration of health was complete.

The youngest case was that of a child fifteen months old, from whom a soft phosphatic calculus weighing forty-four grains was removed by the median operation. In six months another similar formation was removed in the same way. The child became sickly and died about three months after the second operation.

The greatest age is that of eighty-one years, in a gentleman who had lived an active and healthy life until old age. For many years he had been obliged to employ a catheter which passes easily and without pain. Polypous growths around the urethra were suggested as the cause of retention, and they were found in the progress of the lithotomy.

In July, 1877, the patient detected a calculus in introducing the catheter. Since then a burning sensation had been one of the most annoying symptoms. He had been for a considerable time bed-ridden, and was willing to have an operation performed as a means of terminating his life or his suffering.

Oct. 29, 1877, after a cathartic taken the night before and 10 grains of quinine each morning for three mornings and the usual preparations in a warm room, the median incision was made as already described. The sphincter of the anus having been dilated previous to the incision, the fingers of the left hand were readily passed behind the bladder and the forceps were thus aided in grasping a calculus. The extraction was found to require considerable force, and the probe-pointed bistoury was passed in along the blade of the forceps on one side and the resisting fibres were divided, and then the same thing was done on the other side. The stone was extracted; piloted by a polypus which had been torn off by being caught in front of the stone. Three other stones were seized and extracted in succession, each one driving a polypus before it. Four polypi, each about an inch in length, were thus removed, and one of smaller dimensions, making five in all.

The calculi were irregularly triangular, one a little larger than the others and weighed in the aggregate four and a half ounces avoirdupois.

The wound and the bladder were freely mopped with carbolic acid and the wound afterward mopped with chloride of iron.

The pulse, before going into operation, was 120. On coming out of the effects of ether, so as to talk rationally, or about four hours after the operation, the rate was 96, soft and full.

Bathing several times a day was enjoined. The recovery was without a bad symptom. When in the horizontal position, he holds his water completely, but in the erect posture there is some loss. He uses no catheter.

I early got a hint that the great success of Dr. Benjamin Dudley was attributed by himself in part to cutting as little as possible. The more consideration I have given to this subject, the more value I place upon the maxim. The other extreme of excessive violence in tearing the tissues in the extraction, must be avoided.

After an incision of moderate extent, the remainder of the cutting can be executed much more safely under the tension of the expanded forceps, than as a part of the primary cutting made preparatory to the extraction.

In the proceeding as here described, the vessels and other easily gliding parts escapes before the knife, which should have a thick edge, while the fascia and the trabeculae are divided. The elasticity of the undivided tissues helps to lessen the size of the wound remaining after the conclusion of the operation, thus lessening the work to be accomplished by granulation and cicatrization.

One of the cases of median operation in a child, had the stone pushed out by the fingers of the left hand in the rectum, and those of the right hand above the pubis. There is, however, nothing in this procedure to recommend it as a general practice, because the rough surface of the stone produces an unnecessary abrasion of the mucous and the incised surfaces. These cases have all been in the white race.

I have not selected my cases and have never rejected a case. I have not operated in a case of such congestion or degeneration of the kidneys as to produce albuminous urine. There is therefore something of the element of luck in not having lost a case; but I cannot avoid feeling that the methods which I have described are in part to be credited with the success in the later cases.

ARTICLE XXXII.

THE IMPORTANCE OF MAKING LOCAL APPLICATIONS TO THE NASAL AND PHARYNGO-NASAL CAVITIES, THE PHARYNX AND LARYNX IN MEASLES, SCARLET FEVER, DIPHTHERIA AND OTHER ACUTE AFFECTIONS, AND THE MEANS OF MAKING THESE APPLICATIONS.
By THOS. F. RUMBOLD, M. D., of St. Louis.

It is not my intention to treat of the nature, cause or symptoms of the acute affections of the throat that are commonly met with by the practitioner, except so far only as may be required to indicate the proper means for making a local application. When it has been determined by the physician to employ local treatment for the purpose of alleviating the local distress, it is proposed to indicate both the best instruments for making the applications and the best methods of using them.

For the purpose of illustrating these points, a number of cases will be given. In this way those remedies that experience has indicated to be the most beneficial, will be named.

The frequency of the inspection of these cavities is happily increasing, not because the mucous membrane lining them is more easily or more frequently affected than formerly, but because of a growing conviction among the profession, that the symptoms, heretofore considered trivial in their nature, should be more closely examined, than by merely receiving answers to a few questions that were prompted by the patient's complaints. Certainly this conviction will be strengthened if we take into consideration the number and variety of nerves that traverse these regions. This examination will enable us to more fully understand why great constitutional perturbation should follow severe pharyngeal and laryngeal inflammation, and why it is that many apparently distinct affections are only symptoms—the transmitted effect of the disease to other regions. This transmission takes place through nerves intimately connected with the nerves of the inflamed parts.

In these regions are distributed the pharyngeal branch of the pneumogastric—a mixed nerve—principally supplying motion to the pharynx and soft palate. This nerve joins the accessory

branch of the spinal accessory—which is also a mixed nerve—and passing to the upper border of the superior constrictor, interlaces with the glosso-pharyngeal—which is a nerve of motion to the pharynx and of taste—is distributed to the mucous membrane of the fauces, base of the tongue, mucous glands of the mouth and tonsils; it joins also with the superior laryngeal—a sensory branch of the pneumogastric and the sympathetic—forming the pharyngeal plexus, which supplies the mucous membrane and muscles of the locality. The otic ganglion, which receives branches from the sympathetic, sends branches to the tensor palati and tensor tympani. The facial sends branches to the azygos uvulae and the levator palati.

These nerves and groups of nerves have a most important influence upon the general system. The greater the involvement of them in an inflammation or an ulceration, the greater must be the general perturbation.

With patients suffering from any of the exanthematous diseases, the throat and head complications are often the only symptoms that occasion serious apprehensions. In such cases the mucous membrane of the pharyngo-nasal cavity and the pharynx become ulcerated, and not infrequently the inflammation extends through the nostrils up the lachrymal canal and affect the eyes so seriously as to deprive the patient of sight, or it may extend through the Eustachian tubes and eventuate in so serious an ulceration of the middle ear as to produce partial or total deafness, even if the life of the patient be not endangered.

The urgency of the symptoms of many of the acute complaints of the throat, is, many times, not so much on account of any impediment to the respiration, or to the effect of the toxæmia accompanying the disease, as it is a sequence of the involvement of important nerves which extend to other regions of the system, and exert a controlling influence over it. Clinical experience and observation abundantly prove that this is correct, as it is not an uncommon event to notice that constitutional perturbation may be excited or allayed by local applications alone.*

*Two cases that came under my observation will illustrate both of these effects and show the sympathy between the throat and the general system.

In the fall of 1868, Dr. J. A. C. , a hearty, robust man, in apparently good health, requested me to apply a saturated solution of nitrate of silver to his tonsils. The application was carefully made by means of a brush,

The means of making the local applications to the pharyngo-nasal cavity, pharynx and larynx, and the method of using these means, equal in importance, the remedies to be applied.

My experience has taught me that there are three qualifications that the means for making applications must possess.

The first qualification is, that it shall effect that which is required of it, without, at the same time, causing irritation.

All who have had even a few years' experience in the treatment of diseases affecting this region, will see the necessity of carefully observing this precaution. So important a matter is it, that it should not only measure the value of the means for making the application, but also the value of the medicaments that are to be applied to these highly sensitive surfaces. Not infrequently the effect of a remedy would have been beneficial were it not for the irritation occasioned by the rough means used to apply it, such for instance, as a piece of domestic wrapped around a stick, known by the euphonious name of "swab." Experience has abundantly proven that an increase of irritation and a decrease of inflammation cannot go on together in the same membrane.

The second qualification, is: That direct application be made upon every portion of the diseased surfaces within the nasal and pharyngo-nasal cavities, the pharynx and larynx.

Although the correctness and importance of this is obvious, and generally conceded, yet strange as it may appear, this very important indication in treatment is never fulfilled by the

and almost instantly the superabundant solution was neutralized, by a spray of warm salt water. The tonsils were very much enlarged, in which condition they had been for ten or twelve years. On both sides of the throat there appeared yellowish white spots, about the fourth of an inch in diameter. It was my opinion that these were mucous patches, and I advised to have them sprayed with a solution of aconite, muriate of ammonia and iodine, but he feared that he was threatened with an attack of diphtheria, as he had just lost a case of that disease, and wished to have "the thing killed in the start," by the application of silver. Although the application caused at that time but little pain, and a slight constriction of the fauces, yet, in about an hour and a half afterward, the pain was excruciating, his pulse increased to 120, and he experienced chilly sensations, followed by flashes of heat.

There can be no doubt but that his system was slightly under the influence of the diphtheritic poison—as is the case with many physicians while attending such patients—and that it required only the application of this strong solution of silver to blow the kindling flame of the disease

apparatus most commonly employed by the general practitioner and by many of the specialists.

The third qualification is, that it should have force enough to free the diseased surfaces of all of the morbid secretions.

If muco-purulent secretion is allowed to remain on the mucous membrane, it acquires an acrid property; this quality is the result of a kind of fermentation, which the heat of the parts causes or favors. If these secretions are allowed to remain, their acridness will aggravate the inflammation. Cases are numerous in which the complete removal of the secretions is all that is required in the way of local treatment; the secretions alone causing more or less disturbance, which is allayed almost immediately, by their removal under mild measures.

There is no doubt in my mind that the relief that an emetic affords to a patient suffering from a severe tonsillitis, is mainly due to the clearing of the throat by means of the contraction of the muscles of the pharynx and pharyngo-nasal cavity, and by the act of vomiting. I have known several patients to introduce a feather into the fauces for the purpose of producing the act of vomiting. After a few efforts they found that they were relieved as soon as the act of retching cleared the throat of mucus.*

Of the means generally used for making applications I may mention: (*a*) The Gargle; (*b*) Apparatuses by which inhale-

into a conflagration. As the patient kept his bed for three days only, I am satisfied that the perturbation of the system would not have occurred, if the caustic had not been used, and that it was the application of this irritant that sent him to his bed. I also believe, that if his system had not been debilitated by the diphtheritic poison he would not have been compelled to go to bed; *i. e.*, it required the combined effect of both the caustic and the toxæmia to bring about the inflammation and the fever.

In July, 1874, I was called to see a child about five years old, who had taken into her mouth some boiling hot water from the spout of a tea pot. I saw her about half an hour after she had been scalded; she was then asleep from the effects of an hypodermic injection of morphia. Her pulse was about 46 in a quarter of a minute; half of an hour after I had sprayed her throat with a mixture of cosmoline ($\frac{3}{4}$ i) and carbolic acid (gr. i) her pulse was reduced to 36 per quarter of a minute, and in three hours—during which time she had four applications—the number was reduced to 25 per quarter minute. The case made a complete recovery.

* Spraying the throat with equal parts of milk and warm water (about 112° F.,) sweetened with syrup of orange peel, to suit the taste of the patient, is frequently all that is required to cleanse the throat of children suffering from sore throat accompanying scarlet fever.

tions of warm or cold vapor are applied; (*c*) the Swab; (*d*) the Probang; (*e*) the Brush; (*f*) the Syringe, by which liquids and powders are applied; (*g*) the Spray Producers; and (*h*) the application of Solid Substances to the diseased surfaces. Now let us examine carefully which of these eight different means possess the three essential qualifications:

(*a*). Gargles cannot reach the surfaces behind and above the soft palate. They wash the tonsils, the base of the tongue, the anterior surface of the soft palate, and but a small portion of the posterior wall of the pharynx. No reliance should be placed on gargles.

(*b*). It should not be forgotten that the inflamed surfaces are always covered by tenacious secretions, the product of inflammation and that it is most important that this secretion should be removed. Now, very little observation and reflection is required to understand that the inhalation of a vapor, either warm or cold, can, to no extent, cleanse these covered surfaces, except in a secondary way, that is by irritating the uncovered, the healthy surfaces, to the degree of exciting a flow of mucus in the whole cavity, thus washing away, at least, a portion of the adhering mucus. It is evident that the surface that is covered by thick mucus is not affected by a vapor that can be borne comfortably by the patient, and that a vapor that has strength enough, by admixture with the mucus, to affect this surface, is so strong that the healthy—the uncovered surface—would receive instant injury from it, if the patient made more than one inhalation. A method that required the irritation of the healthy parts, to free the covered surfaces must do injury to the healthy surfaces, and the injury done is much greater than the benefit, for the healthy parts take on an inflammation much faster than the diseased portion assumes the healthy condition.

Every observant practitioner knows that the more severe the case, the greater the amount and the more tenacious is the secretion, and that its removal is with difficulty accomplished by water thrown against it with some degree of force. Therefore, to expect that a vapor, a material as light as air, should remove it, is preposterous. It is thus seen that those surfaces that receive the application from the vapor do not require it, and those that require it do not receive it.

It seems remarkable that the habit of prescribing the employment of inhalations from a teapot of hot water containing iodine and carbolic acid should be continued for years, when only a *little* reflection is required to understand that it cannot perform the important office of cleansing the diseased surfaces. Now, if the cleansing process could go along with the irritating, then the act of cleansing might prove a much greater benefit than the act of irritating might prove an injury, but unfortunately this is not the case. The feeling of relief that is derived from this inhalation is through the anæsthetic property of the carbolic acid. To clear the covered surfaces of the muco-purulent secretion, the irritation of the iodine must be greater than the anæsthetic influence of the carbolic acid. It may then be asked, why not leave the iodine out and use the acid alone? This would be an improvement, but the fact that it cannot cleanse the parts, still remains.*

As Inhalations do not possess the second and third qualifications, they should be discarded.

(c.) The Swab is a barbarous instrument, no justification can be given for its employment.

(d.) The Probang is of itself a harsh means for making application to an inflamed mucous membrane, and this objection is sufficient to condemn it. While this objection can not be made against the (c) Bush, yet both of these implements *imperfectly* apply either liquids or powders to an extensively inflamed surface, or to those parts even on which they can be placed. For instance, if a circumscribed spot in the pharyngo-nasal cavity or the larynx is to be touched, it cannot be done without touching other parts also, because that the fauces, in its spasmodic closure, grasps the instrument and thus applies the remaining medicated liquids or powders on the presenting parts of the fauces, and if the whole surface is to be touched, this also will be incomplete, from the fact that as soon as the patient feels the contact of either the probang or bush, contraction of all the muscles of

*I have had three cases upon whom I performed the operation of tracheotomy, each of whom owe the oedematous swelling of the epiglottis and the aryteno-epiglottic folds to the use of hot water inhalations. When there is any tendency to oedematous swelling just above or within the larynx, such inhalations are *sure* to increase the oedema.

the fauces will ensue, thus completely closing the pharynx. This spasmodic closure will be partially relaxed only, while the patient is making expulsive efforts to eject the instrument or the medication, by vomitition and coughing. It is evident, that, under the circumstances, it is only those parts of the mucous membranes that form the projecting folds, which close the fauces, that receives the force and application from the instrument. One might as well expect to wash the palm of the hand clean by pushing a probang between the fingers and the palm, when the hand is closed. In this instance, as in that of the throat, the presenting ridges only are cleansed, leaving those portions of the surface that formed the creases between the folds untouched, hence uncleansed, and those untouched spaces form at *least* one-half of the entire surface.

Not infrequently so much pressure is applied to the probang or bush for the purpose of passing the instrument into the larynx, or up behind the soft palate, that the presenting folds of the mucuous membrane of the fauces receive positive injury. I venture the assertion that if a healthy pharynx is probanged daily for one week, with a sponge and cold water only, the result will be that the healthy throat will be transformed into an inflamed one. Even if these instruments are used with such delicacy that they would cause almost no irritation, still the cleansing and the applications must necessarily be imperfect on account of the spasmodic closure of the fauces already mentioned. It seems evident that neither of these instruments possess either of the three qualifications that are indispensable in the treatment of these irregular cavities.

(f.) The Syringe may be employed to apply either a liquid or a powder. The quantity of liquid that is required to be thrown into the pharyngo-nasal cavity, the region most requiring local applications in acute complaints (as well as chronic), to cleanse the surface, is so great that young patients will not permit a second application. Almost invariably some of the liquids will enter the larynx; when any does do so, the choking is severe and exhausting. This is enough to condemn the instrument, without taking into consideration the injury done by the curved extremity of the syringe, to the highly inflamed membrane lining the posterior wall of the pharynx. While the application of a remedy in a dry condition, by means

of the syringe might have a beneficial effect upon a cleansed surface, it could not, of itself, remove the morbid secretion, yet the removal of the secretions is fully one-half the benefit that is to be derived from the local treatment. Applying a powder upon a diseased mucous membrane, before it is cleansed is but trifling with the patient.

As it is seen that the Syringe does not possess the three qualifications named, it ought to be discarded.

(g). There are various kinds of Spray Producers, some of which do not possess the three important qualifications; either they cause irritation, or they do not cleanse the diseased surfaces, or they do not apply the remedy to the whole of the inflamed surfaces. As there are quite a variety of these instruments used by the profession, I will mention those only that are most commonly employed.

The first of these imperfect instruments now in common use, that I will mention, is known as Richardson's Spray Producer. The best qualification that this instrument possesses is its strength; being made of hard rubber, it is not easily broken. It is this quality that recommends it to the purchaser—its efficiency is taken on trust. This instrument is so constructed that the air passes out at the distal extremity of the tube and enters the bottle at the same time, the air forced into the bottle presses upon the surface of the medicated solution; in this way the liquid is forced out of the same tube from which the air escapes, and is made partially into a spray.

The construction of the instrument seems to indicate that the inventor attempted to make a spray producer, but was not successful, seemingly because he did not know the proper relation of the points of the tubes to each other to make the partial vacuum which was necessary to raise the liquid out of the bottle; failing in this he turned a part of the air into the bottle and compelled the fluid to come out; thus he partially accomplished by force, what he failed to do by art.

The force of this injected liquid and spray is so great that it occasions pain. If the stream was composed of spray and air then its force could not be so great, but because a part of the fluid is not made into spray that part strikes the surface with greater force than it would do were it made into a spray. This pain is also increased by the stream striking but a comparatively

small portion of the surface at a time, not more than one-half inch in diameter.

With this instrument there is furnished two tips, one of which throws the stream in a horizontal direction, the other causes it to issue nearly at right angle with the tube. This tip may be slipped on the tube, so that the stream may be thrown up or down, to the right or to the left. Even if the whole of the diseased surface could be reached by these two tips, which is very far from being the case, the great force with which the stream strikes the highly inflamed and sensitive surfaces, is sufficient to condemn the instrument.

The size of the instrument is another serious objection, as it is frequently impossible to introduce the curved extremity behind the velum without causing its elevation and contraction, thus completely cutting off all avenue for the application to the diseased surfaces in the pharyngo-nasal and nasal cavities.

There is still another more serious objection to this, and to all forms of spray producers that take the medicated fluid from a bottle, viz: that the medicament cannot be applied in a *warm* condition. To properly treat an inflamed mucous membrane, either in the acute or chronic condition, it is essential that all the remedies applied should be *warm*. A remedy that will have a very soothing effect if applied while warm, will occasion positive pain if applied in a cold condition.*

* I have frequently given physicians a prescription for an application for tonsillitis, informing them at the same time that it should be applied in an almost hot condition. Some of them, thinking that the temperature was of small importance, as they had been accustomed to apply all local medications in a cold state, disregarded this part of the instructions, and used it cold, the effect of which was painful rather than alleviating.

ARTICLE XXXIII.

SCOTOMATA.—By WM. DICKINSON, M. D., of St. Louis, Mo.

Scotomata in its widest signification is a term employed to designate any interruption in the field of vision, by the apparent or real interposition of bodies of greater or less density between the objects viewed and the layer of rods and bulbs of the retina. It includes all forms of ocular spectra, muscae volitantes, fixed muscae, etc. Muscae volitantes are very often met with—indeed the eyes of but few persons who have arrived at the middle period of life are free from them, if but favorable circumstances are afforded for their detection. This affection is generally innocent in character and irremediable. When their presence is discovered it is believed by the patient that their supervention was sudden and then for the first time; and it is the almost uniform statement that they first occurred while or after reading or writing for a long period, and attributed to some form of excessive use of the eyes, and more distinctly seen when the eye is directed to a white wall or at the sky. These commonly present the appearance of falling notes, if the eye remains fixed in a given position for a short time. They are, however, of great variety of form and density. The fixed muscae, constant scotomata, which we propose specially to consider, are of a far different character; they present no change of place under any circumstances; they move only when the eye is moved, and remain at rest when the eye is fixed; when once discovered, except in the early stages of the affection which causes or is the occasion of them, they remain unchanged, not improved by treatment, and interfere with perfect vision according to its proximity to or remoteness from the macula lutea.

When the eye is fixed upon a large and near object, a circumscribed portion of it is obscured, as if a disc of variable shape and of greater or less density was interposed between the eye and the object; vision upon either side, eccentric, may be quite normal; under such circumstances the ophthalmoscope will detect a portion of the choroid of the fundus having undergone, or undergoing progressive atrophy. If seen soon after its commence-

ment, while vision is but slightly affected, we may find an effusion between the retina and choroid, (Case I), constituting detachment of the retina; it, however, the affection be of long continuance we shall find, by the aid of the ophthalmoscope, a white patch, which is the portion of the sclera seen, contrasting strongly with the general reddish appearance of the fundus, the choroid at the part having undergone degeneration and subsequent absorption (choroidal atrophy). The area of this atrophic patch is usually diversified by pigmentary deposits, sometimes, almost entirely filled with it, as in Case IV.

Systematic works on Diseases of the Eyes do not give that prominence to this affection which I think it merits. Stellwag, Wells and Walton all give it but a passing mention. The following will illustrate the affection, scotomata, as the synonym of and occasioned by circumscribed choroidal atrophy.

I have transcribed the following from my case-book:

CASE I.—This case in its earlier history exhibits retinal detachment undergoing arrest, but terminating in choroidal atrophy. L. S.—, 17 years; color of iris, blue. In Aug., 1870, was threatened with congestive chill, during which had severe pain over right eye; on Sept. 6, after exposure to hot sun was attacked about noon with severe pain in the head; became dizzy; could see only the right half of objects, (hemipia) the left half being only obscured. These symptoms apparently all passed off in three days. About three weeks before presentation to me, he discovered that vision in the right eye, without obvious cause, began rapidly to fail; it was first discovered by inability to take sight in hunting; he had, however, applied himself previously quite closely to his studies and had suffered from occasional pain in and around the right eye; had a slight degree of photophobia. With the right eye he cannot discover No. 200 Snellen's letters which should by the normal eye be perceived at two hundred feet) at fifteen feet. With a negative glass No. 10 he can see only 100, at fifteen feet. Tension of globe increased. The sclera at periphery of cornea is of a pink color; pupil responds to atropia. Ophthalmoscopic signs: Vessels of optic disc very much congested, the disc in consequence illly defined; external to it is a large spot of whitish color, apparently elevated and having a diameter three times that of the optic disc. This is the seat of effusion and detachment of the retina. There were

also detected fifteen or twenty opaque spots on the posterior capsule of the lens. With this eye, when first tested before a screen at the distance of one foot, the area obscured was about three inches square. Under directions of entire abstinence from the use of eyes, and treatment by cathartics, alteratives, etc., continued during a few weeks, the congestion of the papilla subsided, the extent of retinal detachment diminished and the visual area obscured contracted from three inches in diameter to that of less than one inch. One year and a half later the site of the former detachment was occupied by several spots of choroidal atrophy contiguous to each other, interspersed with pigment; (these presented a circular arrangement, inclosing a portion of choroid affected to a much less degree), but extending to and affecting the macula lutea, nullifying central vision; by eccentric vision he can discover No. 20, and thinks the area obscured less than when last examined. Thus we have demonstrated that the fluid effused had been absorbed; that the function of the portion of choroid affected by it had been destroyed, atrophy and subsequent absorption had taken place, and that these had been succeeded by the final transformations in such sections, *i. e.*, the deposition of pigment throughout its area.

CASE II.—M. H.—, a lad eight years of age; left globe had suffered arrest of development and was void of vision. With the right excessive myopia was the most prominent symptom. Area of pupil nearly filled with lymph and much pigment upon the upper zone of the anterior capsule. With the ophthalmoscope choroidal atrophy readily detected; a large patch extending nearly across the entire fundus diversified with pigment, extending to the macula lutea. Acuteness of vision $\frac{1}{16}$; vision improved a little under tonics and alterative treatment so that he was able to learn to read. Prognosis of course unfavorable in the highest degree. He subsequently passed from under observation. Several years later I was informed he was operated upon for artificial pupil, but without benefit and subsequently became entirely blind.

CASE III.—L. R. C.—, a girl eleven years of age; iris of blue color; defective vision was first discovered in her right eye by her mother only three weeks prior to presentation. While in the act of sewing being told to hold her work in a certain position she said she could not in that position see her work well

with the right eye. The mother then tested her vision, and to her great surprise and regret was assured of the statement of her daughter. Being taken out into the yard she could not see even the house when only a short distance from it. She can now discover only No. 200 at thirteen inches distant and this by eccentric vision. Vision in the left eye of normal acuteness; a large atrophied spot of choroid was present in the right eye, involving the macula lutea; pigment being irregularly desseminated throughout its area; some pigmentary deposits also in the papilla. No treatment given or advised.

CASE IV.—E. G. N.—, a young man twenty-one years of age, having blue irides and extremely myopic. For a number of years has observed that vision of the left eye was defective, discerning only No. LXX at the distance of five feet. With the right reads No. 6 $\frac{1}{2}$ at eight inches; but with a negative glass of ten inches focus reads readily No. 1, at thirteen inches distant; but no glasses benefit the left.

By ophthalmoscopic examination a large patch, nearly circular, of choroidal atrophy is perceived involving the macula lutea; the dense pigment abounding to a degree never before seen, "almost as black as ink," furnishing a striking contrast with the reddish reflex of the other portions of the fundus; a few interruptions of it and of small size permit the sclera to be seen.

CASE V.—J. L.—, a man forty-five years of age, has not been able to read ordinary print for fifteen years; can discern only letters of No. 50 at three feet; color of iris, grey; no glasses render benefit. By the ophthalmoscope large patches of choroidal atrophy are seen in both eyes adjacent to the papilla, which extending towards, involve the macula lutea of each. The usual deposits of pigment are also manifest.

CASE VI.—E. S.—, a young man, eighteen years of age. Right eye normal in all respects. For three years he has observed that vision with left eye was defective, but thought he might be mistaken, or that it would in time disappear; has never received any form of violence upon the head or suffered from exhausting disease. With the left eye can see no object when placed directly before him; has only eccentric vision and this to the normal degree. When placed at one foot from a blackboard, the area

obscured is about five inches in length, by about two inches in breadth, having a position downward and outward.

Extensive choroidal atrophy is detected with the aid of the ophthalmoscope with usual pigmentary deposits of various dimensions. The patch involves the macula lutea; the papilla presents an elevated appearance, but not well defined in its periphery.

CASE VII.—Jno. C——, a man forty years of age, has iris of blue color; lost his right eye many years since by small-pox. Vision with the left has been affected for two years; can now read only when the object is brought very near the eye. An examination reveals extensive atrophy of the choroid adjacent to the papilla, and several patches of like character removed from it studded with pigment; the vessels of the retina clearly discovered traversing these patches.

CASE VIII.—Mr. C. R——, aged twenty-six years; color of iris, brown. One year since, while prospecting as a miner, and breaking rock, a fragment was projected against the left eye; pain to a slight degree was experienced for two or three days; but spots apparently moveable very soon were visible. These have increased in number and density, so that now he can perceive only No. 200 at twelve inches, and then only when held obliquely. With the aid of the ophthalmoscope a large atrophic spot of choroid involving the macula lutea is seen. This patch has a diameter larger than that of the optic disc, and is interspersed with pigmentary deposits; white atrophy has also taken possession of the papilla.

CASE IX.—W. S. M——, a man thirty-five years of age, with iris of light color. He was operated upon by an itinerant for strabismus of the right eye when he was twelve years of age; a high degree of inflammation followed, in which the other eye sympathized, this finally subsided; when eighteen years of age commenced the study of medicine and pursued it for one year, but obliged to discontinue it on account of attack of inflammation of the eyes; after which he saw nothing for four months, and obliged to remain in a darkened room for six months. Has been under the care and treatment of a large number of physicians, but at last recovered to a good degree. About a year since discovered vision a little dim after reading for some time, accompanied by pain in and around the eye; a cloud seemed to pass

over the eye; was cupped on the temples with benefit. Now he has no perception of letters at even three inches distant; discerns only black lines faintly with his right eye; but with the left he can discover some letters of No. xxx. A large atrophic spot discovered situated near the papilla of the right eye, interspersed with numerous deposits of pigment of divers shapes and density. This condition was probably the result of choroiditis, from which he suffered at the age of eighteen years; in consequence of which such nutritional changes had taken place in the elements of the macula lutea as to nullify its peculiar function of being impressed by the images of external objects.

CASE X.—Miss J. T.—, aged eighteen years, has suffered a long time from a high degree of myopia, the most prominent subjective symptom; with right eye can read ordinary print only at four inches distant and with the left at three inches. The ophthalmoscope reveals atrophy of both papillae, and in the left two atrophic patches of the choroid of irregular shape—a full history not obtained; was promised it at a subsequent occasion, which was not granted.

CASE XI.—Mrs. B.—, aged 56, a teacher; color of iris, light. Lenticular cataract of right eye; her exceedingly nervous temperament forbade as accurate examination as was desired. Lost her husband by death four years previously, by which event she was plunged into a state of almost inconsolable grief; and from this period vision with the left eye had been very deceptive, disqualifying her entirely from reading. The papilla of this eye was affected with an advanced degree of white atrophy; and in addition I found a large patch, three times the diameter of the optic disc, of atrophy in which the retina and choroid were involved, beside the macula lutea to a serious degree. This patch was of irregular shape interspersed with numerous pigmentary deposits.

CASE XII.—Mrs. C.—is the mother of two children. Consulted me in May, 1870. In January, 1868, had a miscarriage accompanied by profuse hemorrhage and followed by puerperal fever, which continued for four or five weeks. During convalescence she observed her vision to be impaired. Attempts to read occasioned pain in the globes and temples. She soon began to perceive in the centre of the field of vision a dark cloud—rings

of divers colors flitting from external to internal canthus and return; these still continue; luminous bodies, *e. g.*, the moon, the flame of a candle, appear quite natural; has no photophobia; has had a great diversity of treatment from numerous physicians, varied according to the diagnosis of each. Tonics when the condition was attributed to general debility; local treatment for suspected ulceration of os-uteri; electro-magnetism to temple, spine. Acuteness of vision in both eyes not materially different; can discover only No xx at twelve inches distant, which, by the normal eye is perceived at twenty feet.

With the ophthalmoscope I discovered a large atrophic patch of retina and choroid in each, even extending to and involving the macula lutea. She was informed that she might retain the present amount of vision, but that any attempts with expectation to restore vision would be fruitless. She derived a little aid from a negative glass of twenty inches focus. Reports of her condition six years later confirmed the prognosis, her condition being unchanged, but able to go about the house and perform very many domestic duties.

GENERAL OBSERVATIONS.—All exhausting diseases, especially those of a general character (Case XII); great mental emotions, excessive grief, (Case XI) are not unfrequently cited as precursors of the amblyopia, which is subsequently ascertained to be the result of scotomata. They are frequently met with in young persons, as evidenced by the above; most of such cases are doubtless congenital. They are rarely if ever seen in connection with cerebral hemorrhages; the varied forms of violence upon the head or upon the globe may give rise to effusion between the retina and choroid, or between the choroid and the sclera, and thus occasion nutritional changes in the choroid that shall result in atrophy of its stroma.

In respect to the treatment, after the condition of choroidal atrophy is pronounced, restoration is absolutely impossible; for a part of the normal tissue is wanting, and the power to regenerate, like that of creation, is a gift with which the creature is not endowed. Much may be accomplished in the early stages of some of the affections, if then recognized, which may terminate in choroidal atrophy as in Case I. When this condition is confirmed by the ophthalmoscope, and if it has existed for a consider-

able period, we may give our patient reasonable assurance that vision will no farther deteriorate.

All cases, therefore, of amblyopia arising from whatever cause, should in their earliest stages, receive prompt and the most judicious examination and the treatment indicated, in order that curative means may be employed, or the most effective measures adopted for anticipating or preventing the results, which without them will invariably follow.

ARTICLE XXXIV.

FUNCTIONAL NERVOUS TROUBLES, WITH CASES.*—By SAMUEL J. HARRIS, M. D., of Scotia, Mo.

I venture the assertion that, when we meet with a case that baffles our best efforts at a diagnosis, nine times out of ten, we are dealing with some form of functional nervous disease; and I am satisfied that we meet with many disorders of this nature that have never been described in books or periodicals, from the fact that American medical literature is written principally east of the Alleghanies and north of the Potomac, a district of country in which malarial miasm exerts but little influence, and the physicians of that section see but few of those shattered nervous systems, the result of this most potent nerve poison, with which we of the West and South are so familiar.

While malarial poison is often the exciting cause of a nervous attack, it exerts its most potent influence by debilitating the nerves, more especially the great sympathetic system, rendering it in a fit condition to go off into some of the protean forms of disease at the slightest touch of an exciting cause.

I propose in this paper to say but little about the physiology and pathology of the nervous system. Much has been learned about the brain and nerves in the last few years through the researches of such men as Brown-Sequard, Hantfield Jones, Rom-

*Read before the Rolla District Medical Society, held at Cuba, Mo., November 27th, 1877.

burg, Hammond and others; yet but few of their formulæ have passed into laws, and we will have to wait yet a little while longer before we can get a clear view of this subject, which we can see now but dimly "as through a glass." What I have to present to the Society is merely a clinical history of some groups of nerve symptoms. I am sorry I can not give these groups a name; and yet I do not know but what it is as well, for in no department are we so often led astray by a name as in the treatment of nerve disorders.

The first case I have to present belongs to a class I meet with very often; about as often, I believe, as with pneumonia; and the symptoms are so constant, varying so little in each case, that I really think it deserves a name.

CASE I.—James B——, æt. 35; sanguine temperament; well nourished; has never had any sickness, except several attacks of malarial fever; smokes to excess and drinks moderately.

May 20th.—One week ago, while making some slight exertion, was attacked with palpitation which lasted only a few moments; during the day he noticed that every few minutes he was taking a long or sighing respiration; soon after which he had an uneasiness about the throat and was continually feeling to learn if his collar was not too tight; became very nervous and easily excited. Thinks his symptoms are growing worse; has now some trouble in the head when he gets excited; says that it does not resemble dizziness, nor a rush of blood to the head, but describes it as a nervous wave passing over him and rendering him for a moment nearly unconscious. Has tenitus animi; tongue clean; bowels regular; appetite and digestion good, but has a constant feeling of fullness about the stomach as though he had just eaten a hearty dinner; belches a good deal of wind from the stomach with temporary relief; pulse full and soft; loses one beat in about every seven; it is usually 80, but up to 90 and 100 under the slightest exertion or excitement; says he can count his pulsations by the throbbing of the arteries in his hands and feet. Has a constant but not very severe pain over the heart and at the lower edge of the ribs, extending occasionally to the shoulder and even to the elbow; can sometimes feel pulsations on the right side and in the stomach resembling the beating of his heart. Is very nervous and excitable, so much, so that he is nearly incapacitated for business. No history of syphilis, no

hereditary predispositions. Says that after taking a good stiff toddy, for a while he feels as well as ever. Was ordered a full dose of calomel and jalap.

May 21st.—Says the medicine purged him freely and thinks it made him a good deal worse. Ordered Fl. Ext. nux vom., and Fowler's Solution, each five drops three times a day. Directed him to leave off smoking entirely.

May 22nd.—Smoked none yesterday. Last night soon after lying down had some trouble with his breathing; says there was no difficulty in getting a full breath, but it seemed as if his breathing had become entirely a voluntary act, and without a conscious effort on his part, it would stop; after taking a toddy he got to sleep. He was directed, if the breathing trouble came on again, to take a smoke.

May 30th.—Patient feels some better; says the difficulty of breathing comes on every night on lying down, but is relieved by a few whiffs from his pipe. Treatment continued with slight increase of the dose of the nux vomica and arsenic.

June 10th.—Feels much better; the breathing trouble has entirely disappeared; all the other symptoms continue, but are not so aggravated. Treatment continued, with the addition of sponge bath of cold water on going to bed.

The patient was kept on this treatment for about a month longer and made a complete recovery.

I am aware that all the symptoms in this case can be attributed to dyspepsia; but there was no derangement of the appetite; the digestion was good; it is true, there was some flatus and a sense of fullness about the stomach, but this does not make it dyspepsia. It would be strange, indeed, if the stomach, the most sensitive of all organs to nerve influence, did not show some sympathy with all of this nervous derangement. I think the true reading of the case is: the nervous system, especially the sympathetic, had been debilitated by repeated attacks of malarial fever and excessive smoking. There was, no doubt, partial paresis of the vaso-motor nerves, and the resulting hyperæmia, shown in the full, soft pulse and throbbing arteries, probably produced some undue excitement of the sensory centers. The relief of the dyspnoea by smoking was a good illustration of the well known fact that when the nervous system has been debilitated by the excessive use of

a stimulant, its sudden withdrawal generally makes matters worse for a while, and a judicious resort to it again relieves the patient until his nerves can gradually accommodate themselves to the new order of things.

CASE II.—Miss C——, æt 18; sanguine temperament; well nourished; a sensible girl and not at all emotional. I was called to this case in a hurry and when I reached the house I found her in a comatose condition; learned that she was menstruating and had had a good deal of pain; was of a costive habit and gone four days without a passage. Pupils normal; pulse and respiration perfectly natural; no rigidity of the muscles; no spasm or paralysis; her appearance was that of one in a calm and quiet sleep; but it was impossible to arouse her, cold water dashed into her face failing to move a single muscle. Ordered a purgative enema. I was called into the room about fifteen minutes after the injection was given and found the patient sitting on the bed perfectly rational and even cheerful. Was told that ten minutes after the injection was given she suddenly awoke and asked to be put upon the chamber and had voided nearly a half chamber full of hard faeces. While talking to her to get some history of the case she was suddenly taken with a severe pain in the region of the womb, which speedily became so intense as to require all the attendants to restrain her in bed. I poured a little chloroform on a handkerchief and applied it to her nose, but she had scarcely taken a breath of the vapor when she went off into a profound stupor; again, cold water dashed into her face failed to have any effect, but in ten or fifteen minutes I succeeded in arousing her and she awoke perfectly rational and free from pain. A few minutes afterwards the paroxysms of pain came on as severe as before; the chloroform was used cautiously. It was remarkable that but a small quantity of anesthetic was required to cause her to sleep. After this by a judicious use of the chloroform the pains were kept down without producing full anesthesia.

She made a good recovery without any other treatment, and has had no similar attack since, but is a martyr to sick headache and neuralgia.

Now, we might call this a case of hysterical coma, but the name would give us but little clue to the nature of the disease. There was a mass of fecal matter in the intestines that must have created

great irritation, and by relax or inhibitory action disturbed some of the nervous centers. It is a well established fact in neuropathology that an intestinal irritation will produce spasm of the cerebral arteries, and this irritation acts also on the spinal cord, producing tetanus, or convulsions.

Now, in the above case there was evidently spasm of, at least, some of the cerebral arteries, producing coma; if the irritation had affected the cord as is usual, and produced a rigidity of the muscles, we would have had a typical case of catalepsy; or, had there been violent muscular movements we would have had a case of convulsions. The spasms being confined to the cerebral arteries, and probably to only a few of these, there was no disturbance of the heart; the external carotids not being affected, the face was neither flushed nor pale. As to the agonizing pain in the region of the womb, might it not have been simply an exaggeration of the dysmenorrhoea caused by hyperæsthesia of the sensory centers, the result of a too vigorous reaction from the previous anaesthesia? This seems to me a plausible explanation. The great susceptibility to chloroform was in keeping with the other phenomena; the sympathetic and sensory centers, from previous excitement, being in a condition to respond to the slightest influence.

CASE III.—Was a young man, æt 19; previous health had been good with the exception of chills; but since the age of fifteen, has been addicted to the excessive use of alcoholic liquors; has been on the verge of delirium tremens several times; for the last year has drunk little or none; smokes a good deal and has lately conceived a strong and uncontrollable passion for a young married lady.

June 5th.—When called to see him he was suffering from excruciating pain from neuralgia of the bowels; it was impossible to restrain him in bed, and he rolled on the floor from one side of the room to the other. He was chloroformed to slight anaesthesia, which gave him complete relief; the pains returned every hour or two during the night but were quickly relieved by chloroform.

June 7th.—An action on his bowels to-day brought on a very severe attack; after a few minutes the pain left his bowels and went to his head almost instantly; has developed some hyster-

ical symptoms; is disposed to quote poetry and talk a little too much. Is getting nux vom. and morphine, with chloroform in the severer attacks.

June 10th.—Paroxysms not nearly so severe, but they are still excited from very slight causes, though to-day he had an action on the bowels for the first time without exciting a paroxysm of pain. Is getting nux vom., citrate of iron and quinine with beef tea.

June 15th.—For the last two days has had no return of the pain; appetite good and bowels regular; is rapidly convalescing. Ordered the citrate of iron and quinine to be continued for a week or two.

Six months afterwards he had one or two relapses in which the pain was pretty severe but the attack lasted only for an hour or two.

In this case there were certainly causes enough to produce a shattered nervous system; excessive drinking at the tender age of fifteen; smoking and the mental excitement induced by a hopeless love, was enough to produce nerve disorder.

CASE IV.—Female, *æt* 24; had been married three times; had an excitable disposition; was lazy and indolent; was apt to let her worst passions have full sway; a row with her husband was a daily occurrence. In the language of Prof. Flint, she had “a morbid susceptibility to emotions and a defective power of the will to restrain their manifestations.” About two weeks before I saw her she had been attacked with convulsions and had a paroxysm every day or two after that. On the morning I saw her she had about twenty convulsions in rapid succession. With the closest scrutiny I could find no adequate cause for the trouble. She never had convulsions before; her general health was good and I detected no syphilitic taint; bowels regular; no derangement of the uterine functions. I watched her closely through several paroxysms and noticed she came out of each perfectly sensible and as calm as though nothing had happened.

For two or three days she was treated with chloral and while under its influence she slept calmly and quietly for hours, but on the return of consciousness she would again have “fits.” I ordered the house cleared, as many of her neighbors had out of morbid curiosity visited her, and directed that no one should be

admitted to her but the family. She was put on fl. ext. nux vom with tartar emetic to tolerance. I gave her this prescription for two reasons: first, because her condition called for these remedies; second, because I felt sure that the taste and effect would certainly dispel any morbid desire that she might have to be sick. She had a few convulsions after she was put on this treatment but they soon subsided entirely and have not returned since.

The cause of the convulsions in this case is obscure, but I suppose we can place it under the broad term "hysteria." Her violent mental emotions might have produced sufficient nervous derangement to cause convulsions. I also suspected that excessive venery had something to do in inducing this excited state of the system.

CASE V.—A—— C——, female, æt. 24; married; has been subject to chills; is slightly emaciated and anæmic; is subject to neuralgias; four months pregnant. Was called to see her in a hurry and found her to all appearances in labor; the pains came on regularly every three or four minutes. On examination I found the os uteri not the least dilated but considerable bearing down of the womb. I prescribed the usual morphine treatment and as soon as she became well under its influence, the pains gradually ceased, and in the course of a couple of hours had disappeared entirely. The next day I was again called in a great hurry, and when I reached her bedside I found a woman at each hand and knee performing the usual offices for one in labor; the patient's face was flushed and she was holding her breath and bearing down with terrible pains. I removed my coat as quick as possible, fearing I would not be in time to render her any assistance, but on making an examination to my utter astonishment I found no dilation of the os and but little movement of the womb during the pains. I was soon satisfied there was no threatened miscarriage. Of course I did not feel very egotistical over this discovery. She was put on morphine with the same results as the day before. After this her pains returned every few days, sometimes only slight and again very severe. No treatment but opium seemed to give her any relief; she got nux vom., citrate of iron and quinine, bromide of potassium and Fowler's solution in the intervals, but with little or no benefit. She went to full time and was delivered of a healthy child. After her confinement she had a remission of the pain

tor about a month, when it returned. For the last few weeks she has been taking cod liver oil, and I believe with some benefit.

The above is a good case of uterine neuralgia, and I have put it in this paper because at its onset it so closely simulated a case of threatened miscarriage that I was completely deceived. Before I saw the patient she was herself thoroughly convinced that she was about to abort, and possibly this belief had a good deal to do with shaping the symptoms.

CASE VI.—W—— C——, male, at 40; habits active; has been troubled with constipation for the last two years—without taking a purgative he goes from four to six days without an evacuation; tongue clean and digestion tolerably good; drinks from two to four cups of coffee at each meal. Was ordered a pill of *nux vom.*, *ext. conii* and *podophyllin*, and directed to leave off his coffee. He made a complete recovery in about two months.

This, I think, was a case of paralysis of the muscular coat of the intestines which was induced by the excessive use of coffee.

CASE VII.—In the month of September last, the following rather curious case came under my observation. The patient was a male, at 40; active habits; had several attacks of malarial fever; and smoked to excess. On getting up in the morning he would feel perfectly well; as soon, however, as he had washed and wiped his hands, they would begin to burn, tingle and pain in precisely the same manner as they do from the effects of holding them near the fire after getting very cold in snow-balling. After a few seconds of burning, his hands would begin to swell and continue to do so for five or ten minutes, and to such an extent that he could not close them and had but little use of them.

The swelling would commence going down in the course of an hour and by ten or twelve o'clock would subside entirely. During the day if he but put his hands in water he would have the same symptoms, though only in a very slight degree. If he kept his hands out of water in the morning he would have no trouble. These phenomena continued for about a week and gradually subsided without treatment.

I suppose the phenomena in this case were caused by a de-

bilitated nervous system; the vaso-motors were abnormally sensitive to the stimulus of cold and relapsed suddenly into the opposite state of parisis, leaving the arteries to dilate and produce hyperæmia.

CASE VIII.—Miss B——, æt 17; never had any serious illness; was a healthy, rosy-cheeked girl. For a month she had been nursing a sick sister to whom she was very much devoted, and was almost constantly by her side, taking but little rest or sleep. The night before I saw her, her sister died and she was taken with a fainting fit, followed soon after by great difficulty in breathing; when I saw her early in the morning the laryngismus was seemingly very distressing; her stridulent breathing could be heard across the street, but she was perfectly rational. Soon after she went off into perfect coma which was followed in half an hour by delirium, and this again by stridulent breathing. She got chloroform, brandy punch and beef tea; gradually improved and by the third day was completely restored.

The above I think is a good type case of what is generally called hysteria, and I will close this paper by saying a word about this disease.

The old authors held that hysteria was either malingering, simulating a disease that the patient did not have; or, that they gave way to their passions and emotions without any effort at controlling them with morbid desires to create sympathy; under this view of the disease, the people came to look upon it as being very disreputable and to have not only no sympathy with the sufferer, but a contempt for every one with an attack of hysteria.

Some later authors hold that it is as much a disease as any other affection and should be so dealt with. Hantfield Jones is disposed to limit the name to such cases as are pure simulations of disease. Other authors hold to different views, so hysteria at present has no settled and well defined status; every physician, then, must ask himself, What is hysteria? Shall he deal with it as a disease, or as a mental trouble?

I think it will help us to arrive at a conclusion on this subject if we bear in mind one fact, well established in neuro-pathology; that is, that the same nervous phenomena may be produced by very different causes. Bearing this fact in mind, we will look a little farther than a mere name and search for

the causes. If we do this, we will find that a woman may have hysteria from any irritation transmitted to the nervous centers, such as retained feces, the irritation of dysmenorrhœa, continued pain, or from any cause that will affect the nervous system. She may have hysteria from deep-felt sorrow, from an innate craving for sympathy, from excessive joy, from violent anger, from that state—to use an unprofessional but expressive term—known as “pure cussedness;” in short, from any of the mental emotions.

Now, suppose our patient has hysteria from a fit of anger and most all of us have seen cases of this kind, then she richly deserves the odium attached to the name, and should have no other treatment than burnt rags to her nose. But, should the attack have been caused by deep and heart-felt sorrow, surely she should have no stigma attached to her trouble. Take the case I have just related. Here was a young and lovely girl, one who had no thoughts save those that were pure and holy, whose emotions were all tenderness and love, watching night after night at the bedside of a dying sister, around whose heart the tendrils of her own had entwined with a tenacity that death alone could separate; the tender emotions of love and affection wrought up to the highest pitch, nerved her body to endurance far beyond its normal capacity to bear, and when the last supreme moment came, the tense nerve could bear the strain no farther and the vital machinery was left without a controlling power. Such a case should arouse our tenderest sympathies, and what honorable physician at such a bedside could even *whisper* the name “hysteria.”

THE VALUE OF EXTENSION IN THE TREATMENT OF FRACTURES OF THE FEMUR. By JOHN T. HODGEN, of St. Louis, Mo.

Proposition 1st.—Continuous and equable extension is indispensable to the best results in the treatment of fracture of the femur.

Prop. 2nd.—Continuous and equable extension cannot be secured by lateral supports; the long splint of Liston or its modifications; nor by plaster of Paris dressings.

Prop. 3rd.—Continuous and equable extension can only be secured by suspending the limb.

Prop. 4th.—Suspension furnishes the best means for allowing motion to other parts of the body while maintaining constantly perfect apposition of the fragments of the fractured thigh.

The direction and extent of the displacement of fragments in fractures depend upon the violence causing fracture; the direction of the line of fracture, and the action of the muscles connected either directly or indirectly with the fragments of the broken bone.

The reduction of displaced fragments in all unimpacted fractures may be resisted or prevented by periosteum, ligaments, tendons, fascia, and muscles.

Maintenance will be interfered with by muscular contractions only.

The difficulty of overcoming muscular resistance in the reduction of displaced fragments in fractures, is determined by the force of muscular contraction, modified by the site of attachment and the direction of the muscular action.

Active muscular contractions are determined by stimulation of muscular tissue, applied directly or indirectly to the muscles. Muscles contract independently of stimulation. The contraction occurring without stimulation differs from that which follows stimulation, in this, that it is less in force and indefinite in duration, while the contraction responsive to irritation is violent (active) with greater force and of limited duration.

The tonic muscular contraction is that which, without equal resistance, causes and maintains shortening in bones obliquely fractured, and angling in transverse fractures which are not displaced.

When tendons are divided, the divided ends separate and remain so until they are united by new material. When muscles are divided the wound gapes and remains open from the tonic

* Extracted from the American Medical Association Transactions, 1877.

contraction of the muscular tissue. If a limb is flexed for a week or two, it is found that the muscles which are permitted by the position to shorten are not easily extended to their normal length.

When an attempt is made to adjust the displaced fragments in a fracture, we have not only the force of muscular tonicity to overcome, but also the active contraction excited by the manipulation. But when the adjustment is perfect, the muscular tonicity alone tends to displace the fragments. Practically, a fracture is transverse when the line of fracture is such that the fragments may be made to abut one against the other in such a way as to resist the tonic contraction of the muscles.

The resistance to shortening thus afforded by the fragments thus appears immediately after the reduction of a fracture has led to the false conclusion that lateral supports are all that may be required in the treatment of transverse fractures.

I had recently, in our city hospital, a case of oblique fracture of the tibia, in which the line was so serrated that when the fragments were adjusted the length of the limb was perfectly maintained. Lateral supports were applied, and two weeks later the limb was found shortened, and the sharp angle of the upper fragment was found pressing against the skin of the shin. Now during these two weeks the ends of the bones had so altered that the serrations that at first fitted one into the other were absorbed, and the bones no longer possessed the irregularities that enabled them to abut one against the other. In the processes that precede the union of fractures, the bones become softened and absorbed to such a degree that the tonic contraction of the muscles which constantly press the one fragment against the other, will necessarily produce shortening. In every case then in which the tonic contraction is not resisted by some constantly acting force, shortening does occur.

The extent to which the ends of bones soften in the processes necessary to union is very variable, and depends on the degree and the duration of the increased vascularity of the fragments.

During the fall of 1874, A. W., aged 14 years, was brought to my office having both bones of the forearm broken. The fracture was a simple, transverse one, the ends were not displaced, but only formed an angle one with the other, the angle presenting toward the dorsal surface of the forearm.

The angle was corrected, and the bones seemed and were in perfect apposition. I applied the usual dorsal and palmar splints. The case progressed well for three weeks, and then the patient complained of pain on the radial side at the site of fracture, and the ulnar side of the fracture was more prominent. I then supposed that this prominence was due to an unusual deposit of provisional callus.

I readjusted the splints; a few days later there was a distinct angling, and the angle did not present toward the dorsal but to-

ward the ulnar side. I tried faithfully to prevent deformity, but utterly failed. The radial side presented its normal appearance, but the ulnar angling was marked.

May 31, 1877.—I find to-day the angle of the ulna apparent, the radius straight. The lower end of the ulna is more prominent on the dorsum than that of the other arm.

The explanation that I propose for this, is that the shortening was greater in the radius, consequently the ulna was made to angle to conform in length to the shortened radius. This occurred notwithstanding the most carefully applied lateral supports, aided by the ulna and the inter-osseous membrane.

In Colle's fracture it is the rarest thing to have the bone unite without deformity. This deformity is especially well marked in the prominence of the lower end of the ulna, and this is no doubt due to the partial displacement of the carpal end of the ulna, consequent upon the shortening of the radius at the site of fracture.

Except in those rare and perhaps doubtful cases in which it is said fractured bones heal by immediate union, there is always an appreciable amount of new material joining the original matter at the site of fracture.

This new material is cicatricial (*i. e.*, imperfect), and will be replaced by more perfect bone at a later period.

It is common to speak of scars as contracting, and they do contract in the soft parts, and I know no reason why bone scars should not also contract.

The fact that fractured bones, recently united by provisional callus, are often found of the original length, and subsequently without angular deformity are found to have shortened, is conclusive evidence that the scars of bone are not an exception to the rule of contraction in cicatrices.

Is it possible that lateral supports can prevent the tonic contractions of muscle? I am free to say that I have good reason to know that lateral supports do not prevent the tonic contraction of muscles.

It is true that in clonic contraction muscles change their form without variation in volume, for when they diminish in length they increase in thickness, but muscles are largely made up of water and surrounded with connective tissue whose spaces are filled with fluid. It is absurd to suppose that muscles cannot and do not contract, when surrounded by lateral supports, as in the treatment of fractures of the thigh.

The serum surrounding the muscles, the serum in the muscle, the blood in the blood vessels, furnish a material so readily displaced that the muscles of the thigh could contract though the limb were surrounded by a case of iron fitting as accurately as the skin itself.

It is the practice after amputation of the limbs to apply a bandage snugly from the end of the stump up to the next joint

above, with the intention of preventing retraction of the flaps and consequent protrusion of the bones. After a day or two, I have invariably found the flaps retracted, and the bones failed to protrude in those cases only in which the flaps were left so long that the usual retraction was not sufficient to draw the soft parts entirely beyond their ends.

It will be remarked that surgeons in making amputations, with the probable retraction of flaps in view, make the flaps longer or shorter as the point of amputation varies from the point of origin of the muscles, which form a part of the flap. With the hope of giving more uniform support to the flaps, I have, many times, applied plaster of Paris bandages to the stumps, embracing them up to the next joint; but I have invariably found after a day or two that the flaps were retracted within the plaster casing.

In oblique fractures of the tibia, surgeons have in many cases found it impossible to prevent the rising end of a fragment from pressing dangerously on the skin of the shin, and the rising of the end is only one method of expressing muscular contraction, for the end is forced to rise by the lapping of the obliquely fractured bone at the site of fracture.

I have been thus tedious in multiplying facts in regard to muscular contraction, not because there is a question concerning the contraction of muscles after fractures, but for the reason that some prominent members of the profession have given utterance to language which has been misunderstood, which has been supposed to express the thought that every fracture of the thigh could be so treated by plaster of Paris dressing as to prevent shortening.

Let us for a moment consider the changes occurring in a fractured limb during the use of the long splint of Liston. Place the splint on the outer aspect of the limb, let it extend below the foot and above the hip, bind the limb and splint with the usual roller bandage, extend the muscles by such force as may be required to give the limb its proper length and allow the fragments to occupy their proper relations: now draw tight your well-padded perineal band and fix it so that it cannot loosen. You visit your patient on the second day to examine the dressings and find the perineal band is not tight, measure the limb and you find it shortened. Again extend the muscles, once more tighten the perineal band, and repeat this process every day or two for four, six, eight, or twelve weeks, and at the end of this time it will be found that the perineal band has elongated, the tissues about the perineum, the prominence of the rounded thigh, the fullness of the outer part of the leg, the plumpness of the instep having atrophied, and through these changes, both in the extending apparatus and the tissues, the muscles have by their tonic contractile power shortened the limb.

Follow another case: Put your patient on a firm table, place

a padded iron standard between his thighs, attach a screw-extending apparatus to the lower part of his leg, etherize the patient, then stretch the muscles until the ends of the fragments come fully into position, pad the projecting bony points with cotton wool, apply a wet bandage, impregnated with plaster of Paris, in layers sufficiently numerous to form a firm plaster case which accurately fits the limb and extends to the tuberosity of the ischium, the spine of the ilium and embraces the pelvis. Continue the anæsthetic and the extension until the plaster is firmly set.

Now do not fancy that because you have made the adjustment perfect and applied the plaster smoothly that this plaster will continue to fit perfectly. Atrophy will occur rapidly and unequally—the muscular tissue will constantly tend to produce the shortening, which the atrophy of the points of pressure of the extending and counter-extending forces will permit. After a week you will find you can put your finger between the foot and the plaster case, while you may place your hand between the plaster and the hip. If you percuss the front of the plaster case it will yield a resonant sound. It will be found that the limb is too small for the apparatus of fixation, and indeed the limb is not fixed, but badly requires fixing.

What now? Cut the case in front from end to end, take out a piece or put in padding, and once more adjust the fixed apparatus to the unstable limb. What can be more unstable than the ever-wasting, ever-changing tissue of the human body. The very blood which bears to the tissues fresh supplies of nutritive material carries back the products of disintegrated tissue.

The fact that it is found necessary after a few days to cut the plaster and readjust it is an admission that it does not make uniform extension. The time for readjustment is not reached until the shrinkage of the limb has allowed shortening within the plaster case. So soon as atrophy begins, and it does begin at the moment the extending agent makes pressure on the point of contact at the upper and lower parts of the limb, the muscles by their tonic contraction will cause the pointed fragments of an obliquely fractured bone to override.

We are told that this shrinkage must not be allowed to occur, that to prevent this the patient must get up and move about the room. In a report on fractures, read before the Surgical section of this Association in 1874, by Prof. Sayre, at Detroit, I find this language: "It will be particularly observed in studying these tables that the three cases of greatest shortening in which the permanent dressing of plaster of Paris was applied, were the three cases that were necessarily confined to their bed on account of other complications, showing that if this dressing is the one preferred by the surgeon, it is better to keep his patient up and walking about occasionally, as the limb will then fill with blood and retain its accuracy of fit to the plaster casing, whereas

the horizontal posture allows of more shrinkage, and the extension not being accurately retained necessitates the more frequent change of the dressings.

I can understand that the erect posture would allow an increased quantity of blood to flow into a pendant limb, and that the returning flow would be retarded, and that the plaster case would now be filled and kept full by the edematous limb, but I cannot understand how the tissues at the points at which extension and counter-extension are made and kept so tightly filled with blood and serum as to make adequate extension on the limb. We may be told that the weight of the limb is to act as the extending force, and I am ready to admit that this would be sufficient, yet it is impossible to keep the patient erect during the entire six, eight or twelve weeks required for the accomplishment of firm union. If the patient be kept walking about the room for six hours in the twenty-four, it is quite as much as the most vigorous man could accomplish with a fractured thigh. The change of posture twice in twenty-four hours will imply the application of extension six hours, and its entire absence eighteen hours of the twenty-four.

The proposition is too absurd to deserve serious consideration. I do not wish to be understood as regarding lateral supports as valueless, but I do assert that lateral supports are of value in the treatment of fractures only so far as they aid in preventing angular deformity, and in transverse fractures aid as extending agents only by keeping the ends of the fractured bones opposite each other, and thus enable the bones themselves to resist the contraction of the muscles.

Having thus far considered the inefficiency of lateral supports only as used alone in the treatment of fractures of the thigh, and the impossibility of maintaining continuous extension by any of the so-called fixed apparatuses, I come now to consider directly the value of continuous extension in the treatment of fractures of the femur. By continuous extension I mean the employment of a force that does not vary in power.

To have continuous extension we must use a force that is unvarying, and apply that force so that it may not be modified by friction.

Elastic extension cannot be unvarying from the very character of the material used.

The weight and pulley as used by Hildanus and modified by Buck must vary in its action because of friction. Oblique suspension is the only possible way in which unvarying extension can be applied, and this is absolutely unvarying, provided the angle is constantly maintained and the weight of the suspended limb does not change.

The muscles that tend to produce a shortening in oblique fractures of the thigh, during the period of union of the fractures, when the ends of the bones are softened by nutritive

changes preparatory to union, are the muscles that tend to cause angling in transverse fractures after adjustment, either in one direction or another, and are so balanced by their relative strength and sites of attachment, that one and only one position can be found in which the opposing muscles will act with equal force upon the fractured fragments. This is due to the fact that muscles in extreme extension are capable of acting with more force than when in any degree shortened. The force of action decreases as the muscle is shortened to its limit when its power of contraction is nothing (zero). Hence it occurs that when the lower extremity, after fracture of the thigh, is placed on a line with the trunk (*i. e.*, in the straight position) the muscles that flex the thigh and flex the leg are relatively more extended (tense) than the muscles which extend the thigh and the leg.

Since some of the muscles of the thigh, *i. e.*, the gracilis, semimembranosus, and semitendinosus are adductors of the thigh as well as flexors of the leg, the extended position of the leg elongates these adductors, but when the leg is flexed they are comparatively short.

In the extended position of the leg and thigh, then, the flexors and adductors of the thigh would act with more force on the lower fragment than the extensors and abductors. On the contrary, if the leg and thigh are in positions of extreme flexion, the extensor muscles would act with more force than the flexors.

Please allow a quotation from Nathan Smith, from *Memoirs* by Dr. N. R. Smith, page 133: "If surgeons who are in the habit of applying bandages tightly around fractured limbs would take the trouble to investigate the subject, I think they would perceive that such practice can do nothing but mischief."

In a case of compound fracture in which the ends of the bones are in sight, or in which they can be touched by the fingers, if the surgeons will take hold of the limb below the fracture, while he keeps his finger on the fractured ends of the bones, he will find that by moving the limb into its proper relative situation with the limb above the fracture, the bones will readily come into apposition; but, if he attempts to bring them into apposition by pressing them down with his fingers, he will find it utterly impossible to do it with any force, unless he moves the limb below the fracture with the other hand."

John Aitkin, of Edinburgh, in 1771, says, in reference to maintaining extension: "The grand desideratum is, by some means or other, to create a temporary substitution to the now deficient apposition, which was afforded by the bone to the contractility of the femoral muscles."

Pott fully appreciates the importance, the physiological relation of muscles in the treatment of fractures, and John Bell approved the same course in reference to position.

The precise position in which the thigh and leg should be placed in any fracture of the femur, can only be determined by

the direction, site of attachment, and strength of the muscles acting on the broken bone, and the site and direction of the fracture; but in any case, a state of flexion of both leg and thigh, varied in degree, as determined by the site of fracture, will be found the best means of bringing the opposing muscles into that equal state of tension which will most certainly secure coaptation, and render fixation most easy of accomplishment and most comfortably borne.

In the reduction of dislocated joints, all surgeons recognize the importance of considering the force and direction of muscular action. If contracted muscles are to be elongated in the reduction of dislocations, we use moderate continuous extension, in preference to great force momentarily applied. The same rule should be observed in replacing the fragments in fractures.

After adjusting the fragments they are best maintained in position by such extension as will precisely substitute the extending force exercised by the bone itself before fracture.

I desire, now, to call attention to the uniform and persistent action of the force of gravity, and wish to say that the only possible way in which we can fully utilize the force of gravity is without the intervention of such apparatus as will afford friction. The methods by weight and pulley are objectionable, because of the unequal tension of the muscles due to the straight position, the friction incident to the use of a pulley, and the friction between the limb and the fixed bed on which the limb rests, and the impossibility of moving the body without either varying the extending force or disturbing the fragments by lateral deviations. If, however, the limb be suspended so that it, with all its coverings, floats freely in the air, we may, by removing the points of suspension from the perpendicular, get any amount of extending force required to balance the tonic contraction of the muscles.

The amount of force required to maintain extension can be determined with accuracy, by varying the obliquity of the suspending cord until the patient is entirely free from pain, and this will occur as soon as the muscular force is so overcome as to allow the bony fragments to gain their normal relations. In practice I have had little difficulty in adjusting the extending force so as to make the patient entirely comfortable.

I do not wish to imply that the smarting pain of a compound fracture is relieved by extension, but only that the pain due to the disturbance of the soft parts by the irritation of the bony fragments no longer continues, and the pain of the contracted muscles is at an end.

Within twenty-four hours, a child of five years will learn the precise amount of extension required for his comfort, and he will maintain that degree of extension. Fortunately, the condition of the most accurate adjustment is that of the greatest comfort to the patient.

With this suspension and extension, the surgeon may rely on the aid of his patient to maintain the adjustment. It will be found, as the case progresses, that much less extending force is required than in the beginning, and in practice it is observed that the patient will adapt his position, with wonderful precision, to the lessening tonic contractile power of the muscles. That,

Proposition first—In the treatment of fractures of the femur, continuous and equable extension is indispensable to the best results, is conclusively shown in the impossibility of maintaining, with equal certainty, accurate coaptation by any other means.

Proposition second—Continuous and equable extension cannot be secured by lateral supports, the long splint of Liston, or its modifications, nor by plaster-of-Paris dressings, because the material used in making extension yields, and the points of the body on which extension and counter-extension are made undergo atrophy.

Proposition third—Continuous and equable extension can only be secured by suspending the limb, because in no other way can we avoid friction between the extending force and the part to be extended.

Proposition fourth—Suspension furnishes the best means for allowing motion of other parts of the body, while perfect apposition of the fragments of the fractured thigh is constantly maintained, because there is no resistance offered to the movements of the limb in any direction in which the body may be moved, except in the direction from the point of suspension. In every other direction the limb follows the movement of the body without the least friction.

Proceedings of Medical Societies.

ST. LOUIS MEDICAL SOCIETY. — LOUIS C. BOISLINIERE, M. D.,
President.

[Revised by the Committee on Debates for THE JOURNAL.]

MEDICAL SOCIETY HALL,)
POLYTECHNIC BUILDING,)
ST. LOUIS, January and February, 1878. }

The Remarks of the Retiring President, Dr. J. M. Scott.

GENTLEMEN:—Another cycle in our history as a Society is completed, another year is with the buried past, with its pleasures and pains, its successes and mistakes. Whatever of mistakes has been committed here, we pray, you, for “sweet Charity’s sake,” to forget, and to remember the past year as one of unparalleled prosperity to us as a Society. I say it with no small degree of pride that the year has been one of the most prosperous which we have had for a long series of years. There has been a greater number of papers read before us than ever before—papers which give assurance of the intelligence, ability and research of their authors; and I say with peculiar pleasure that many, if not the most of these papers were presented by the younger members of the Society. We have also had a large number of most interesting pathological specimens presented, enough to form the nucleus of a museum at once interesting and instructive to the student of medicine. I trust that you will soon find it to your interest to collect these specimens and such others as may be from time to time presented, and preserve them in a permanent manner. A small outlay of money would be sufficient for the present, and we would thus be laying the foundation for a museum of pathological anatomy, which would soon become our pride, and a source of instruction to us. No man in this day can or dare ignore pathological investigation; then why should we not furnish the place and the means for such investigation? The medical Society of the *third* city in the Union cannot afford to be without its pathological museum. I, therefore, commend this project to your earnest consideration; and now gentlemen, I thank you most cordially for the kind and courteous manner in which you have sustained me during the past year, and to those who have so heartily and earnestly united with me in efforts to sustain the fair fame of our Society, by bringing their cases, presenting specimens, and preparing and reading well digested papers, my more than thanks are due. Be ye not weary in well doing.

And now, sir, (addressing the newly elected President, Dr. Louis C. Boisligniere), in presenting to you this gavel, the emblem of your authority, I most sincerely wish you the same cordial support which has been extended to me. Gentlemen of this Society, I present to you, Prof. Boisligniere, your future President.

The newly elected President made a few appropriate remarks, after which the Society proceeded to business.

DR. LUTZ presented a paper discussing certain observations recently made by Prof. Nothnagel, showing the great rapidity with which blood corpuscles pass from the ultimate bronchial tubes into the interstitial lung substance. The experiments were made upon squirrels. The trachea and vessels of the neck were cut with a scissors, and as soon as the convulsive movements induced were over, *i. e.*, within from three and a half to five minutes, the lungs were removed and cast into absolute alcohol. The ultimate bronchial tubes and interstitial lung substance were afterwards found to contain a great number of blood corpuscles. To prove that the presence of these blood corpuscles in the structure in which they were found, was not due to *pulmonary* hæmorrhage occasioned during the death throes of the animal, Nothnagel cut the carotid alone, allowing no blood to enter the trachea, and in these cases found no corpuscle in the lung tissue. Nothnagel supposes that the blood corpuscles, in the experiment spoken of, reach the interstitial tissue of the lungs by way of the lymphatics, which are distributed minutely to the ultimate bronchi and alveolar spaces.

DR. LUTZ thought that some interesting deductions might be drawn from these observations. Accepting the theory, that without implantation of micrococci diphtheria cannot be developed, local treatment would not avail much, for the respiratory influx of air would deposit the germs of disease in the interior of the lung, as well as upon the uvula, palate, and pharynx. These experiments would seem to indicate, that septic particles so drawn into the lungs, would be rapidly absorbed. The rapid absorption of blood, Dr. Lutz also thought, would seem to strengthen the opinion that bronchial hæmorrhage is not an exciting cause of phthisis, unless the blood should be retained in parts already diseased and there undergo putrefaction.

DR. FORD remarked that the phenomena attending Nothnagel's experiments, which seemed to him to have been quite imperfect both in plan and execution, could be more properly referred to the well known effects of section of the pneumogastrie in the neck, upon the capillary circulation of the lungs. He thought the presence of extravasated blood in the alveoli and of blood corpuscles in the trabecular tissue of the lungs might reasonably be referred to spastic contractions of the smaller vessels of the lungs, induced by direct or reflected irritation of

the pneumogastric. The results are very similar to those determined by Brown-Sequard as attendant upon injuries to the pons and cerebral crura. There may have been a diapidesis of corpuscles from the turgescient capillaries, even without actual rupture, into the trabecular tissue of the lungs.

DR. NEWMAN presented two supernumerary fingers removed from a child about two weeks old. They had been attached to the meta-carpo phalangeal articulation of the little finger, one on each hand. Two years ago, he had removed one from the hand of the child's brother.

DR. WM. JOHNSTON reported a case of infecting chaneroid ulcer as follows: "About the middle of November last, after an impure connection, the patient consulted a physician, and was told that he had a simple abrasion of the prepuce. Two weeks later he presented himself at my office and upon examination, I found an ulcer of the frenum about a quarter of an inch in diameter and of considerable depth, by which the frenum had entirely destroyed. There was a slight tumefaction of the left inguinal glands. I regarded the sore as a chancre and the patient has now a syphilitic eruption. Nevertheless this sore had much more the appearance of a chaneroid than of a true chancre. There was no induration of its base. I had always doubted the dualistic doctrine, and am convinced that constitutional symptoms will follow soft chancres occasionally. I am inclined to believe that constitutional infection depends very much upon the condition of the patient, more distinctly so than upon any inherent difference between the two kinds of virus."

DR. THOS. SCOTT, remarked that he was a firm believer in the duality of the chanerous virus; that he had treated at least a hundred and fifty cases of chancre and chaneroid, and had never seen but one case where a suppurating bubo was followed by secondary symptoms.

DR. KEALHOFFER narrated the history of a case of tertiary syphilis, in which no secondary symptoms had ever manifested themselves. Fifteen years ago the patient had an indurated sore; he has been married fourteen years and has healthy children. Ten years intervened between the appearance of the sore and the occurrence of constitutional symptoms. The patient has since suffered from ozaena to such an extent that portions of the nasal bones have been lost; he has now deep and extensive ulcerations of the larynx with intra laryngeal vegetations and thickening of the laryngeal mucous membrane. The epiglottis is adherent on both sides and the vocal cords can not be seen. Tracheotomy is anticipated.

DR. HODGEX reported the following incident which occurred in his treatment of a case of antelexion of the uterus. In order

to introduce a sea-tangle tent, the woman having been placed in Sims' position and the uterus drawn down, an attempt was made to correct the flexion by the use of the sound. As this did not answer satisfactorily, he endeavored to bend the tent, and in doing so partly broke it, after the manner of what is styled in surgical parlance, "a greenstick fracture." As the tent did not seem to be injured, nor to be capable of wounding the wall of the cervical canal, he nevertheless pushed it in and left it. Attempting to withdraw it the following day, the tent broke, and one half of it was left behind. A sponge tent was at once introduced, and on the following morning, the canal was sufficiently dilated to allow of manipulations with finger and forceps, by means of which the lost fragment was recovered. He took occasion to speak of the necessity of watchfulness with regard to the integrity of tents to be inserted into the uterus.

DR. LUTZ presented the specimen of a case of carcinoma of the pyloric extremity of the stomach; the patient had had the usual symptoms of cancer of the stomach, but no *tumefaction* could be made out during life by palpation.

DR. PREWITT, related the history of a case of cancer of the stomach, in which the patient, an old man, had suffered from pains in the stomach, vomiting, distension and hæmatemesis, alternating with intervals of comparative comfort. When the patient was first seen he was suffering from malarial fever; at that time no evidence of the existence of tumor could be found though he had suffered from previous attacks of gastric disturbance. Subsequently, however, a tumor could be detected, and a notable point in the history of the case consisted in the fact that the *tumefaction* could be felt at certain times, but was not to be made out at others. He remarked that we may have all the symptoms of cancer of the stomach in other affections. The diagnosis he thought could be relied on, only when the existence of local *tumefaction* was determinable. The hæmatemesis of cancer of the stomach differs from that observed in gastric ulcer; it is usually frequent and small in amount, while in gastric ulcer the vomiting of blood occurs at longer intervals and is more profuse.

DR. FORD reported a case in which the post mortem revealed a disseminated cancer of the pyloric end of the stomach. The disease had originated apparently in the muscular wall of the organ and had invaded the omentum, the colon, and to a slight extent, the liver also. A collection of sero-purulent matter between the layers of the great omentum, in immediate contiguity with the parts involved, burst simultaneously into the stomach and colon. Inspection showed ragged openings into each of these viscera, surrounded by nodulated cancerous masses. The patient had suddenly vomited a pint of purulent matter, passing a large quantity of the same material by stool, almost simultane-

ously. Death occurred the next day. During life it had been altogether impossible to make out the existence of any local intumescence.

DR. MCPHEETERS reported a case of scirrhus, in which the pyloric orifice had been contracted to the size of a crow's quill. He had been able to prolong the patient's life for several months by the use of nutritive enemata. He directed attention to a statement of Dr. Flint in an essay on the subject, that the absorbing powers of the rectum are greater than has been generally supposed, and recommended the cramming of the rectal cavity with pulped meat to which pancreatic emulsions had been added.

DR. KENNARD thought it useless to attempt to prolong life in this way, unless the patient was a person of importance, claiming that the treatment is simply a prolongation of a most distressing and utterly hopeless state, where cancerous disease is the cause of inanition.

DR. NEWMAN dissented from this view. Some kinds of nutritious material are more easily absorbed by the rectum than others. Greasy substances are not easily taken up. Milk, he thought, was more readily absorbed than anything else. He spoke of a case of typhoid fever in which the patient was kept alive many weeks, finally recovering, by enemata of milk, beef tea and brandy.

DR. FABER reported the case of a gentleman, still under observation, who vomited blood a year ago, and who now has a very well defined hard tumor in the right hypochondrium. This patient is nourished through the rectum; his dejections, which never occur without the use of a soap and water enema, are always followed by stringy, band-like masses of albuminoid substances, showing no organization under the microscope, which are evidently the more or less completely digested matters introduced with nutritive intent. At present the patient does not vomit bloody nor grumous matter.

DR. A. C. BERNAYS reported a case of echinococcus cyst of the liver, in which the contents of the cyst were discharged through the intestine.

DR. WM. PORTER exhibited a pair of casts of the mouth, one taken from a child affected with congenital syphilis, the other, by way of contrast, from a healthy child. He called attention to the increased height of the bony roof of the mouth sometimes found in children who are the subjects of hereditary syphilis. The angle of junction of the palatal processes of the superior maxillary bones, together forming the palatal vault, is often more acute than natural in the subjects of hereditary syph-

ilis. The teeth are also roughened, and the upper middle incisors peg-shaped.

DR. RUMBOLD said that he had had somewhat unusual opportunities for observing the shape of the palatal vault, but was unable to confirm the statement that an exaggeration of the natural arching of the roof of the mouth was characteristic of hereditary syphilis.

DR. WM. PORTER stated that he had received letters from twenty-three physicians on the subject, each of whom averred that he had seen one or more cases in point. He had had eleven cases in his clinic of children affected with hereditary syphilis, in all of whom there was an increase in the arching of the mouth. According to Dr. Langdon Downe, idiocy may produce the same conformation, except in the few cases of macrocephalic idiots with inordinately large crania; syphilitic children are known to be frequently idiotic.

Mr. Jonathan Hutchinson's assertions respecting the diagnostic value of notched and pegged teeth in relation to congenital syphilis having been mentioned,

DR. HUGHES rose to protest against the idea that such teeth were pathognomonic of hereditary syphilis. A single well attested observation adverse to the theory, he said, should have much weight. He mentioned a case now under his personal observation in which these teeth are well presented, but where there is positively no hereditary taint. This theory, he thought, would be exploded before long, as that of a specific cancer-cell has been.

DR. RUMBOLD stated that no dentists believed in the notched-teeth theory.

DR. PREWITT declared that simple *notching* of the teeth was of no cogent significance; only a peculiar kind of notching was characteristic of syphilis. He thought that the profession at large endorsed all that Mr. Hutchinson has said in relation to this sign of hereditary syphilis; no authority has taken issue with him. If the occurrence of these teeth are of pathognomonic value, the fact will be of immense value to the profession.

DR. STEVENS in reply, affirmed that he had never regarded the doctrine as well sustained. He had observed the teeth in families where the parents were above suspicion.

DR. FORD said that according to Mr. Hutchinson the teeth in question were those of the second dentition only; their premature wearing away and notching was due to abnormal softness, and their small size and separation from each other to defective nutrition. He called attention to a statement of Mr. Lane (in the *Lancet* for September, 1877,) that the doctrine in question has of late been dissented from by men of much note, among

them Mr. Henry Lee, who believed them to be merely the result of impaired nutrition, whether caused by syphilis, scrofula, or any other condition. Dr. Lane, himself, has never been convinced that these teeth are characteristic of syphilis.

DR. KEALHOFFER stated that he had had several cases in which these notched teeth were present, but in which the idea of a syphilitic taint could not possibly be entertained. He had noticed this condition of the teeth after an epidemic of scarlet fever. He had several cases under observation, likewise, of exaggeration of the palatal arch, in families where the existence of syphilis was out of the question.

DR. A. C. BERNAYS remarked that it was a prevalent idea in Vienna that the operation of staphyloraphy in syphilitic children was much facilitated by the exaggerated height of the roof of the mouth in such cases. The mucous membrane and periosteum being of greater extent could be more readily brought into contact from either side so to close the fissure between the bony processes.

DR. HAMMOND said he had had occasion to study the subject some time since, and had come to the conclusion that the *notching* of the teeth could not be regarded as pathognomonic of syphilis, but he thought that a peculiar peg like shape was.

DR. PREWITT observed that members were speaking of seeing the teeth frequently; they must have been mistaken as to the exact kind of teeth described by Hutchinson, who says they are scarce.

After some further discussion of the subject, DR. HUGHES presented a report of suppurative pneumo-hepatitis, in which the hepatic abscess was discharged through the lung and recovery ensued within thirty days.

DR. MOORE narrated the history of a case treated thirty-four years ago, in which the pus was discharged through the lung; the patient recovered. In his experience, such cases generally recovered.

DR. PREWITT reported a case of hepatic abscess which pointed externally. He wished to open the abscess, but could not find evidence of the establishment of adhesion between the visceral and parietal layers of the peritoneum. To effect this highly important adhesion various plans have been tried from time to time, among them caustics, which, however, have failed even in the skillful hands of Nelaton. He had, therefore, employed needles, introduced and left *in situ*, according to the following method:

Sixteen Glover's needles, one and a half inches in length, were pushed through a piece of gutta serena, in two concentric

circles—the larger about the size of half a dollar, the smaller that of a quarter of a dollar. A thread was run through the eyes of all the needles, to prevent them from slipping through into the cavity of the abscess or of the abdomen, and another piece of gutta serena was moulded upon the first one to prevent them slipping out. The pointed ends of the needles were kept apart by means of perforated pasteboard. The needles were thrust into the swelling and left for two or three days, when a free incision was made with issue of pus. The patient is doing well.

DR. MUDD inquired at what state the needles were introduced.

DR. PREWITT in reply stated that they were placed a little to the right of the median line, an inch and a half below the margin of the ribs.

DR. MUDD rejoined that the liver moves a good deal at that point, and thought there would be danger of the needles slipping and wounding the peritoneum and adjacent viscera unless the liver was fixed in position.

DR. PREWITT replied that he had taken special care to immobilize the parts by circular bandages tightly applied around the entire thorax and abdomen so as to prevent to a great extent displacements of the abdominal viscera during the respiratory movements; the bandages were applied very much as we apply the plaster bandage in caries of the spinal vertebrae.

DR. FISCHER then read a paper upon "The Effects of Condensed and Rarefied Air in the Treatment of Diseases of the Lungs."

MINUTES OF THE EIGHTH SEMI-ANNUAL MEETING OF THE ROLLA
DISTRICT MEDICAL SOCIETY, HELD AT CUBA, CRAWFORD COUNTY,
MO., NOVEMBER 27TH AND 28TH, 1877.

(Reported for THE JOURNAL.)

The Society was convened at 10:30 A. M., the President, Dr. W. E. Glenn, of Rolla, in the chair.

Dr. Headlee reported a case of scrofulous abscess in the dorsal region, associated with hip-joint trouble, in a child six years old. The abscess was first opened with the aspirator and afterwards with the lancet; there was complete recovery. The case was

discussed by Dr. Glenn and others, after which the Society adjourned to meet at 1:30 p. m.

AFTERNOON SESSION.

Dr. J. S. Frost, of Phelps County, reported a case of convulsions in a child three months old, whose mother at time of its birth had puerperal convulsions. The case elicited considerable discussion; the opinion prevailing that the convulsions were not a sequel of the mother's condition at birth.

Dr. McManagle reported a case of malarial cerebro-spinal meningitis, with recovery. He also presented to the Society the case of a patient, with indolent ulcers following impure vaccination thirteen years ago. In the discussion that followed Dr. Thompson thought the virus had been contaminated with venereal poison. Dr. Glenn and others held the same view.

Dr. Harris, of Scotia, read a paper on Functional Nervous Disorders, with the report of cases, (see page 280.) The Society adjourned to meet at 7 o'clock p. m.

NIGHT SESSION.

Dr. W. E. Glenn, of Rolla, delivered an address on the "Progress of Medicine since our last Meeting," closing his address by the discussion of some of the fundamental laws of Physiology.

He was followed by Dr. J. S. Thompson in a lengthy paper on the laws of "Progress *vs.* Evolution."

SECOND DAY.

The Society met at 8 o'clock A. M., Dr. Glenn in the chair.

Dr. Thompson, of Salem, read a paper written by Dr. Godley who was absent, on "Opium Poisoning," with case. The case was a child, five days old, that had taken the fourth of a powder containing ten grains of bismuth and the eighth of a grain of morphine. The child had clonic spasms with paroxysms of asphyxia which continued to recur for about eighteen hours after the poison was taken. During the last ten hours of this time there was marked hyperemia of the vessels of the brain as shown by the distension of the fontanella, alternating with anemia shown by depression of fontanella. The treatment was flagellation, coffee, the hot and the cold douche, and artificial respiration. The artificial respiration was kept up during the paroxysm of asphyxia for eighteen hours. The case recovered.

Dr. Coffee had seen a case of opium poisoning in an adult, but there was nothing like clonicspasms.

Dr. Harris thought there was a great difference in the symptoms of opium poison in the child and the adult; in the former there seemed to be less coma and more derangement of the vaso motor centers and medulla oblongata.

Dr. Glenn had given five grains of morphine with no bad effects to a woman who had been taking opium for only two weeks.

Dr. Harrison had seen a child one year old, take fifteen drops of laudanum and recover.

Dr. S. H. McManagle reported a case of vomiting in pregnancy, in which, after using all the known remedies without benefit, he, with the assistance and concurrence of Dr. S. S. Harris, induced abortion with recovery of the patient.

Dr. Thompson had relieved a patient in one case with hydrobromic acid.

Dr. Headlee used oxalate of cerium, sulphite of soda, belladonna and blisters to the stomach.

Dr. Frost preferred carbolic acid, and had succeeded with vinegar and black pepper.

Dr. Coffee thought carbolic acid no better than creasote.

Dr. Harris used nitrate of silver.

Dr. Headlee thought vomiting in pregnancy was of two kinds; one in which the stomach was affected, and the other where the fetus kept up an irritation through reflex action; in the latter case, nothing but abortion would relieve the patient.

Dr. Headlee reported case of amputation of the thigh for necrosis of the femur. The patient recovered.

Dr. Thompson had seen a similar case where death resulted from pyæmia, ten days after amputation.

Dr. Headlee reported a case of acute mania in a man thirty years of age; the patient recovered in three weeks under the use of chloral hydrate and potas. bromide.

Dr. Harris reported a case of gangrene, extending to the middle of the metatarsus of both feet, in a man seventy years of age, caused by frost bite. He saw the case for the first time thirty days after the accident; there was a complete separation of the living and dead parts, the former mostly sloughed away, and the latter covered with healthy granulations. On consultation with Dr. Coffee, it was decided not to amputate; but a paste board retractor was applied, and the metatarsal bones sawed off as close to the stump as possible. The flesh could not be drawn over the bones with adhesive strips as expected, but they were soon covered with granulations, and in six months the patient made a complete recovery, with much more useful stumps than he would have had, had amputation been performed.

Dr. McManagle had seen a natural amputation of the thigh where the bone protruded and sloughed off without interference. He also reported a case of fibrous tumor of the right parotid gland, which he extirpated with nearly the whole of the gland. He presented the specimens removed; his patient recovered. The case and the specimen excited a good deal of interest and some discussion.

Dr. J. T. Coffee, of Steelville, reported a very interesting

case of softening of the brain, where the hair on one side of the head ceased to grow while it continued to do so on the other.

Dr. S. H. Headlee, of St. James, read a paper on "Heredity," in which he brought out some of the laws of evolution as held by Huxley and his school.

Dr. Harris reported a case of amputation of an extra finger and toe on each hand and foot of a child six months of age. He used the elastic ligature in the same manner as dentists use the rubber dam.

The Society directed the Secretary to prepare a synopsis of the proceedings for publication in the *ST. LOUIS MEDICAL AND SURGICAL JOURNAL*.

MILTON GODLEY, Sec'y.

Salem, Mo., March 7th, 1878.

Clinical Reports from Private Practice.

A CASE OF OVARIOTOMY. By EDW. BORCK, M. D., of St. Louis.

The following is the history of this case as given to me by Dr. E. A. Vogt, the family physician:

Mrs. Maria A. Bodeman, residing on St. Charles Rock Road, near Rinckles; married; aged 55; German; tall and slender; mother of five children, three grown and two dead. She is of good constitution. Consulted me on the 19th of January, 1878, on account of an enlargement in her abdomen, which was gradually increasing; her right foot was swollen; she suffered from constipation and sometimes retention of urine; her appetite was good and she slept well. She stated that seventeen years ago she perceived a small hard lump in her right side and at the same time her menses ceased to appear. Her abdomen gradually enlarged and she believed herself pregnant. Not feeling very well she consulted Dr. Heitzig, who informed her that she was not *eniente*; he gave her a prescription. After she took the medicine the swelling disappeared, leaving a small hard lump in her right side. This was not followed by any deterioration of her health until within the last two months, when her abdomen began rapidly to increase in size. On palpation I perceived a partly hard and partly soft elastic tumor in her right iliac region, extending somewhat to the left of the median line, very slightly movable; no pain on pressure. Per vaginam ex-

amination revealed uterus of normal depth, moveable, and fundus drawn a little to the right side; ordered four grain doses of iodide of potassium every two hours; the compound iodine ointment with extract of belladonna to be applied externally morning and night. Gave my opinion as to the presence of an ovarian tumor, which unless diminished by the medicine, would require extirpation to save her life. Under this treatment the patient for the first few weeks thought that she was improving and the tumor diminishing. On the 18th of February I saw her again, the tumor now was much enlarged; called Dr. Hall in consultation, who confirmed my diagnosis, and told her that an early operation would be all that could relieve her. E. A. V.

This case then came into my hand. A close examination was made and a multilocular tumor diagnosed with several hard tumors attached, which we thought might possibly be fibroids with adhesions. Uterus moveable; the tumor had increased very much in the last two months; the patient being very tranquil, having a calm, resolute appearance, but not exactly the *facies ovariana* (after Wells) and willing to undergo anything for relief.

The danger of the operation having been fully explained to her and husband, she decided in favor of the operation for the 4th of March. In the interval the friends of the patient being desirous of the opinion of another surgeon, it was agreed to consult Prof. John T. Hodgen; accordingly we met the Doctor at his office. He examined the patient very carefully, and gave it as his opinion that the case was one of a multilocular tumor with adhesion, probably very short and broad pedicle; thought the case not very favorable for an operation; advised to still wait a while longer, unless the tumor grew rapidly, and not to operate as long as the patient was comfortable. Upon this decision the patient was sent home to remain under the care of the family physician for observation. However, the tumor grew rapidly; the patient feeling very uncomfortable, suffering from difficulty of breathing, constipation and pain. I was informed by the family physician that the patient had determined to have the operation performed and requested me to be ready by Tuesday morning, March 19th. Under these circumstances I agreed to operate. I may here take opportunity to state that I, as well as the above named gentleman and the patient, was exceedingly sorry that Dr. John T. Hodgen could not possibly be present during the operation. The next choice was Dr. Louis Bauer, whom I accordingly invited. Everything was well prepared for the operation; the room was whitewashed, the floor well scrubbed with chloriate of soda and water; towels and bed sheets rinsed in a like solution; all furniture removed; clean wash basins, etc.; a single bed with a new mattress, ready made, and the whole covered with a rubber cloth. Previous to the operation the patient took one grain of opium at 9 o'clock

and one grain at 10 o'clock; she was wrapped in flannel blankets, with warm water bottles to her feet. Dr. Louis Bauer, who saw the patient for the first time, examined her very carefully, and thought the case was not unfavorable. This decision for the operation was confirmed by the concurrence of all concerned. The patient was then placed in bed and Dr. Charles J. S. Digges administered the chloroform, the patient taking it very kindly.

Dr. Hiram Christopher took charge of the sponges which I had previously prepared by washing in a weak solution of nitric acid, and then in a solution of soda, then soaked well in carbolic acid water. During the operation the sponges were washed in carbolic acid water and then dipped in artificial serum¹ before being used again. The Doctor rendered admirable assistance. Dr. E. A. Vogt took position on the right of the patient, supporting the abdominal walls, which office he performed excellently. No intestines or omentum protruded. Mr. Alex. Hebrun, of the firm of A. M. Leslie & Co., surgical instrument maker, took charge of the steam atomizer, which he handled well.²

The room's temperature was 75° to 80° Fahrenheit. A solution of iodide of potassium and iodine in water was placed on the stove to fumigate the room.³ All the assistants washed their hands in carbolic acid and rinsed them in artificial serum. Distilled water, warm and cold, only was used. The instruments before being used were dipped in carbolic acid water.

Having thus everything well prepared and ready, with the kind assistance and skillful precept of Dr. Louis Bauer on the left of the patient and opposite me, I proceeded and made an incision in the linea alba from the umbilicus to within half an inch of the pubis. The cellular tissue was a little cedematous. I divided layer after layer down to the peritoneum, waited till all bleeding, which was remarkably little, had ceased, the patient not losing more than a teaspoonful of blood during the whole operation; no artery needed tying. I opened the peritoneum and exposed the tumor. There was no adhesion with the exception of three small ribbon-like connections with the peritoneum on the right side, very vascular, which were tied each by carbolized linen thread, cut short. I introduced a trocar into the cyst and drew off nearly a bucket full of dark fluid of a

1. Artificial serum made as follows:

Chloride of Sodium.....	5 jv.
Albumin.....	5 jv.
Water.....	0 jv.

M. This was made the temperature of blood heat.

2. The strength of the carbolized solution used for the steam atomizer was carbolic acid, 1 part, alcohol, 1 part, glycerine, 1 part, and distilled water, 5 parts.

3. The iodine fumigation was of the strength of $\frac{1}{4}$ gr. iodine, 1 grs. iod. potassium, to $\frac{3}{4}$ i distilled water.

greenish brown color, very tenacious and gelatinous.⁴ There was only this one large cyst to be emptied of fluid, besides which it contained hard masses of lobulated degenerated substances.

The pedicle was long and thin. I applied a Dawson's clamp, below this a double catgut ligature, removed the tumor with a pair of serrated scissors, then removed the clamp—there was no bleeding—dropped the pedicle into the pelvic cavity, which needed very little sponging.

The wound, which on account of the contraction of the abdominal parietes, now measured only four inches, was closed with four deep doubled silk ligatures; a strip of pasteboard, previously well soaked in carbolized oil and dried, was used after the manner of the quilled suture. Seven superficial silk ligatures were next put in, all being well carbolized and waxed. The wound was dressed with lint and carbolized glycerine, cotton prepared with salicylic acid was used as a cover;⁵ then the abdomen was surrounded by a carbolized gauze bandage. One-half of a grain of morphine was subcutaneously injected, the rubber blanket removed, and four hoops fixed to the bed to keep cover from abdomen.

The patient rallied admirably from the anaesthesia; no vomiting. The tumor and its contents weighed 18 pounds and 9 ounces; the cyst alone 4 lb. 3 oz.; there probably escaped in addition to this 7 to 10 lbs. of fluid on the floor. The operation lasted 45 minutes from the beginning till the dressing was completed. No one was allowed to enter or leave the room during the operation. Afterwards no one except the nurse was allowed in the room. Carbolic acid spray was used every few hours afterwards. Pulse before operation, 76; after operation, 87; temperature, $95\frac{3}{4}^{\circ}$; respiration 30. Immediately after operation $\frac{1}{2}$ gr. morphia, subcutaneously. One hour after this three grains of opium per mouth, and followed by one grain every two hours. I remained with my patient till 4 o'clock p.m. She was quiet and in good spirits; skin moist; gave her a little cold milk porridge and water. Was relieved by Dr. Vogt, who remained till 11 o'clock p.m. Pulse 98; temp. 101° ; resp. 30. I then took charge again, remaining up all night till 8 o'clock the next morning. Drew half a pint of clear urine by catheter. Patient slept three hours during the night. Pulse 95; temp. $103\frac{1}{2}^{\circ}$; resp. 28. Takes milk and ice. Lett her in charge of Sister Franzisca of the St. Marien Convent. Noon,

5. The cotton was prepared as follows: Salicylic acid $\overline{3}$ i. dissolve in sulph. ether $\overline{3}$ ij. This was sprinkled over the cotton and allowed to evaporate, which left the acid on the cotton according to Dr. Prince's method.

4. The liquid contained in the cyst coagulated on the application of heat and nitric acid. On microscopic examination of the fluid it was found to contain abundance of blood corpuscles and degenerative tissue.

pulse 90; temp. 102°. Evening, pulse 100; temp. 105°; respiration 30.

Slept a little during the day. Passed a gallon of urine. Vagina and neck of uterus is hot but not tender. During night, pulse 90.

21st.—Morning, pulse 100; temp. 104°; resp., 28. Noon, pulse 90; temp. 102½°. There was no pain; no symptoms of peritonitis. Introduced two fingers into the rectum to let flatus pass. Evening, pulse 110; temp. 104°; resp. hurried; enemata of inf. of mentha viridis; flatus passed well. The excitement was produced by mental emotion, from domestic causes and not from her condition. Her tongue was dry; thirst quenched by ice and cold milk. During the night the pulse was 89; temp. 100°; passed urine.

22nd.—The patient is cheerful. Morning, pulse 88; temp. 100°; resp. 25. Evening, pulse 95; temp. 101°. During night, pulse 90; temp. 101°.

23rd.—Morning, pulse 88; temp. 99½°. Uterus and vagina not hot nor tender to touch. The patient took raw egg and iced milk. Noon, pulse 88; temp. 100°. Evening, pulse 96; temp. 100°; resp. 23. Increased the opium to two grains every three hours. Looked at the wound which was healed without any suppuration.

24th.—Evening, pulse 86; temp. 99°; resp. 22. Patient rested well and complained of not having enough to eat.

25th.—Afternoon, pulse 80; temp. 99; resp., quiet; tongue moist. Removed the four deep seated sutures and two superficial sutures. Not a drop of matter, but a little induration round wound; some gas in the intestine. Treatment continued.

26th.—Pulse 80; temp. 99½° at noon; sleeps well; passes urine freely; is tranquil.

27th.—At noon, pulse 86; temp. 99°; resp. 22. Removed all stitches, wound healed and not a drop of pus; dressed with vaseline, enemata of soap water and ol. ricine; had a good evacuation and flatus passed; skin moist; treatment continued; allowed pigeon broth.

28th.—Pulse 90; temp. 100°; resp., 18. An evacuation of the bowels followed an enema. Slept well; skin and tongue moist.

29th.—Pulse 86; temp. 98½°; resp. normal. Slept well; had three natural evacuations of the bowels.

30th.—Pulse 86; respiration and temperature normal. Slept well; passed water. Ordered chocolate. Wound looks well; no suppuration; abdomen natural and soft; skin and tongue moist. She is left in the care of the family physician, Dr. Vogt. Will not visit her until next Thursday, unless called to do so.

From the above daily report, it is seen that the patient is doing well. She has taken in all 102 grains of opium and one-

half grain of morphine—the latter hypodermically. She may now be considered as having passed the most dangerous time. The farther history of the case will be given in the next number of *THE JOURNAL*.

The success of this case may be attributed to the favorable circumstances surrounding the patient. She was in good health and spirits, feeling confident that she would survive the operation, and I think that the time for operation was well selected, for had this been delayed—had her health began to fail, and had the tumor grown larger, the prospect might not have been as good as it is now. The weather also was very favorable, the temperature being mild. She had excellent nursing. Although her room was on the lower floor, yet it had windows to the east and west, and doors on the north and south. She had the benefit of country air. Undoubtedly a part of the credit must be given to the careful and scrupulous preparations, and although some surgeons do not put much faith in Lister's Antiseptic method, yet one thing is certain, that to follow it enforces discipline and care, which is essential to success.

The walls of the cyst were thick and dense. The peritoneum lining the abdominal wall, was remarkably thick and so dense that it was with difficulty that I could thrust a needle through it.

In conclusion I wish to express my sincere thanks to Dr. Louis Bauer for the promptitude with which he rendered me his valuable assistance; and to Dr. E. A. Vogt for carrying out so carefully all directions given him in the preparation of the patient, and for his prudence and good judgment in the after treatment. Also to the other gentlemen for their assistance, and to Sister Franzisca for her faithful discharge of her arduous and responsible duty.

3613 NORTH NINTH ST.

REPORT OF TWO CASES OF NASO-PHARYNGEAL CATARRH, AND ONE

CASE OF NASO-PHARYNGO-LARYNGEAL CATARRH WITH REMARKS.

By J. G. CARPENTER, M. D., of Crab Orchard Springs, Ky.

JAN., 1876. CASE I.—W. R. D., aged nine years, came to me for treatment; had been affected with catarrh for two years, and at this time the disease was very much aggravated and extended from nasal cavities to pharynx, Eustachian tubes and middle ears. The mucous membrane of nasal cavities and pharynx was very much congested, more or less infiltrated; thickened and excoriations of mucous membrane of the former were very

much marked, especially that covering the inferior turbinated bones. There was a muco-purulent secretion from nose and pharynx, and an abundance of incrustations from anterior nares. Deafness was complete in left ear, but patient could hear the watch tick if applied directly to right ear; tonsils were hypertrophied and almost met on median line. As a sequel of deafness impediment of speech supervened; frontal headache was almost constant; patient had a good constitution; his parents were healthy, and there is no predisposition to hereditary diseases. Cause of catarrh in this case was exposure to damp and cold weather and catching cold. Treatment was begun by cleansing the naso-pharyngeal cavities with a solution of chloride of sodium \mathfrak{z} j, water Oj , warmed and used as a spray, and then medicating the parts with the following:

R. Acidi Carbolic.....m xij.
Glycerine..... \mathfrak{z} ss.
Pinus Canadensis..... \mathfrak{z} j.
Aq. Ferv..... \mathfrak{z} vj ss.

M. This is to be applied thoroughly to the nasal and naso-pharyngeal cavities with Rumbold's spray producers Nos. 1, 2, 4 and 5, followed by an application of cosmoline with No. 3. The cosmoline being heated to solution and sprayed into the mouth and anterior nares.

These applications were made every day for five days; every other day for three weeks; twice a week for two weeks; and once a week for five weeks, in connection with the inflation of the Eustachian tubes by Politzer's air-bag every day for two weeks, and every third day for a month; finally every fifth day until patient was dismissed. The hypertrophied tonsils were treated with the following:

R. Iodini.....Gr. j.
Potassi Iodide.....Grs. xx.
Pricc's Glycerine..... \mathfrak{z} j.
Aq. Distil.....Q. s.

M. Injected gts. xx-xxx every seventh day with a hypodermic syringe into the hypertrophied tonsils until reduced.

CASE II.—H. M., male, aged twelve years; delicate; family history good; came to me for treatment January 15th, 1876; had catarrh of naso-pharyngeal cavities with elongation of uvula and hypertrophy of both tonsils. There was a mucous secretion from nares; great congestion, and infiltration of lining membrane of naso-pharyngeal cavities and abrasions of the lining membrane of the inferior turbinated bones. There was also constant cough, due to the tickling sensation produced by the elongated uvula, and constant pain in frontal region of head. This case was treated with the following:

R. Acidi Carbolic.....m x.
Glycerine..... \mathfrak{z} j ss.
Pinus Canadensis..... \mathfrak{z} ij.
Aq. Ferv..... \mathfrak{z} vj ss.

M. Use warm as a spray preceded by cleansing the diseased surfaces with chloride of sodium \mathfrak{z} j, aqua Oj , followed by an application of cosmoline, the latter being heated to a solution and used as a spray.

These applications were made every day for four days; every other day for two weeks; twice a week for two weeks, and once a week for three weeks. The hypertrophied tonsils were treated with the following:

R. Iodini.....	Gr. ʒ.
Potassi Iod.....	Grs. v.
Price's Glycerine.....	ʒ. ʒ.
Aq. Distil.....	ʒ. ss.

M. Injected gtt's. xx-xxx every seventh day with a hypodermic syringe into the enlarged tonsils until reduced.

Three applications were sufficient to reduce the tonsils to natural size. Patient was dismissed, but returned again in the fall to be treated, as he had contracted a violent cold, and was treated a month *pro re nata*.

CASE III.—Mrs. M., of California, aged 47; is delicate; has been in bad health several years; has had catarrh fifteen years; in the summer of 1877 she visited Crab Orchard Springs and applied to me for treatment. She had been treated by some of the best physicians in the United States, but affirms she never experienced any great benefit from treatment of her catarrh until I treated her with Rumbold's method. On laryngoscopic and rhinoscopic examination the mucous membrane of the larynx, pharynx and nasal cavities was very much congested, reddened, infiltrated and thickened. The vocal cords were also very much congested and reddened. There was a burning pain in the larynx, a weak voice, difficulty in speaking above an ordinary tone, and a hacking cough. The sensibility of the nasal cavities was very much blunted, the most fragrant or pungent odors scarcely making an impression on the pituitary membrane. I consider this a case of proliferous inflammation, or dry catarrh. The mucous membrane was deprived of its natural moisture from inactivity of the glands, produced by the disease. The treatment of this case was begun with a solution of potassi bromid grs. x, to aq. distil. fl. ʒ. j used as a spray every day for ten days, followed by an application of cosmoline. The bromide was used to allay irritability of throat, to increase the secretion of the mucous membrane and to produce contraction of the flabby tissues. The following was substituted for bromide; it proved to be more constringent, soothing and pleasant to the patient:

R. Acidi Carbolic.....	an x.
Glycerine.....	ʒ. j.
Pinus Canadensis.....	ʒ. j.
Aq. Ferv.....	ʒ. vi.

Tr. aconite gtt's. v-x to a drachm of this mixture was given to allay pain and irritability of larynx.

Treatment of naso-pharyngo-laryngeal catarrh with the use of the glass spray producers devised by Rumbold is undoubtedly the best method extant. The nasal douche is highly injurious in the treatment of nasal catarrh, as the disease in the upper part of the nasal cavities is not reached, and the surfaces on the floor

and sides are medicated too much; besides, the entrance of fluid into the Eustachian tubes is apt to produce otitis media. The postnasal syringe is a good instrument, but owing to the sensibility and retraction of the soft palate and uvula, applications are made with difficulty to the posterior nares in most persons.

Treatment by insufflation has its disadvantages; while it medicates a great portion of the parts diseased, there are many irregularities and fissures in the upper part of the nasal cavities which cannot be reached by this method.

Having treated a number of cases of nasal, naso-pharyngeal and laryngeal catarrh with Rumbold's instruments, and having had catarrh myself, I can speak both from experience and observation, as to the utility, benefit and success attending his plan of treatment. One great point to be remembered in the treatment of catarrh is to use mild applications, as the catarrh can not be cured in a short time, nor by harsh means, but it may sometimes be done by cleansing and by gentle medication applied to the diseased parts. The applications should not be continued so long as to cause debility of the tissues.

In treating laryngeal and aural catarrh, the naso-pharyngeal cavity ought to be examined with a rhinoscope, as the origin of the throat and ear trouble is located in this cavity; therefore, the latter should be treated at the same time with the throat and ear. "There are three indications for the cessation of any single application: 1st, pain produced by treatment. 2nd, when the parts are cleansed. 3rd, when every diseased part has been treated or medicated." The medicine, which I derived most benefit from are, chloride of sodium, carbolic acid, pinus canadensis, bromide of potas, salicylic acid and cosmoline; the latter is very soothing and guards against the exhalation of the watery portion of the mucus, and prevents inspissation of the mucopurulent secretions. The salicylic acid is a good deodorizer.

By using the glass spray producers in the treatment of catarrh, every irregularity and all the surface of parts diseased are medicated equally, so that a point of diseased tissue the size of a pin head is not omitted from anterior nares to the trachea. This is the only method which answers every demand in the successful treatment of nasal, naso-pharyngeal and laryngeal catarrh.

The first case improved rapidly; when dismissed the mucopurulent secretions and the formation of scabs had ceased; the blood vessels disorged and normal in size; no excoriations existed; enlargement of tonsils reduced to natural size; deafness was relieved so that the patient could hear the ticking of a watch at a normal distance, and impediment of speech consequent upon deafness was relieved.

The third case was visiting Crab Orchard Springs; was under treatment one month, but during that time was very much bene-

fitted, and when treatment was discontinued the congestion of vocal cords and mucous membrane of the larynx, pharynx and nasal cavities, together with the redness, infiltration and thickening was very much diminished; the burning pain in the larynx, and hacking cough had ceased, voice had become stronger and sensibility of pituitary membrane much improved.

"Patients should not remain in a place where a current of air can strike but limited parts of the body, especially the head; should not be exposed to night air if possible; when out at this time, wrap additional clothing about the neck and chest and keep the mouth closed; should not go to any place where there is impure atmosphere of a high temperature, nor should they allow the feet to become cold; they should breathe through nostrils day and night; should wear fine cotton-wool drawers and vest next to the body—thin in warm weather and a sufficient number of additional suits in cold weather to keep the body warm; they should not use tobacco, nor remain in a room where it is being smoked; nor should they use spirituous drink, unless prescribed by a physician.

Should a cold recur, regard it as of the greatest importance to get rid of it at once; while it is slowly wearing off it may do irreparable damage to the mucous membrane; therefore, drive it away quickly. The effect of habitually allowing colds to run their course, makes it possible for the next one to remain a longer time; the continuance of this habit for a few years, will result in a return of the disease to its original severe condition."

Biographical.

ST. LOUIS, March 7, 1878.

EDS. JOURNAL:—I beg leave to send a slip from a French paper, of the proceedings of the Legislative Assembly of France, in reference to the death of Claude Bernard—with my translations—which, if you see fit, you may insert in the next number of the ST. LOUIS MEDICAL JOURNAL.

It is quite refreshing to see such unprecedented honor paid, in France at least, to true worth, and it is still more gratifying that the recipient is a member of our noble profession, who had worked long and labored persistently in the ward of the Salpêtrière, under and with his great teacher and friend, the

Psychiatrist *Fallore*, in whose house, and at whose table, I frequently met him, and was honored with the invitation to visit him in his laboratory, at the *Sarbonne* whenever I felt inclined.

I attended a course of his lectures one winter, which can never be forgotten. The spacious amphitheatre at the *Sarbonne* was filled with hearers from all parts of the globe, mostly aged and profusely decorated men, such as I never saw elsewhere. He was a rapid speaker, but his ideas came too fast for distinct utterance. His illustrations in experimental physiology were promptly and always successfully carried out by a large corps of expert assistants.

The numerous animals used for his experiments seemed to have been trained also. The dogs, rabbits, cats, old horse, small elephant, frogs, birds, mice, almost all knew when they were wanted, and submitted to vivisection without a struggle. As soon as he announced a physiological fact, it was proven by experiments. There were no skeptics possible in that large audience.

Claude Bernard though dead, will always live among the votaries of science; and with the earnest enquirer after truth.

S. POLLAK, M. D.

1019 PINE STREET.

[Translated from the French.]

CHAMBER OF DEPUTIES.

MONDAY, February 11th, 1878.

Monsieur Bardoux, Minister of Public Instruction, proposed a law, tending to the payment of the funeral expenses of Claude Bernard, by the State, and that 10,000 francs be appropriated for that purpose.

The Minister moved the previous question. (Applause.)

M. Gambetta, Chairman of the Committee of Ways and Means, made a verbal report, in support of the motion of the Minister. "M. Claude Bernard is universal science, a sure guide, and an inspirer recognized by the whole world. He has never been carried away by any particular system, and at this moment he has acquired immortality." (Applause.)

The resolution was adopted by 450 to 1.

Baron Larrey thanked the Chamber of Deputies, in the name of the Academy of Science of which he was a member, for the

striking homage they had tendered to the memory of Claude Bernard. (Applause.)

SENATE.

MONDAY, February 11, 1878.

M. Bardoux, Minister of Public Instruction: "I have the honor to lay on the table a law which has been promptly passed by the Chamber of Deputies. I ask here also the previous question. Claude Bernard is dead. In order to honor the memory of this illustrious savant, the government has thought it proper that the funeral expenses be paid by the State. I propose that 10,000 francs be appropriated for that purpose." [Loud applause from all parts. "Question! question! We are unanimous."

The President: "This law must be referred to the Committee on Finance, which may act on it at once." ["Very well! very well!" from all sides.]

In a few minutes the Committee on Finance made a favorable report, and it became a law by a vote of 248—unanimous.

FROM THE LE PROGRES MEDICAL, Feb. 16, 1878. [Translated for THE JOURNAL by S. POLLAK, M. D., of St. Louis.]

Claude Bernard is dead. Since last December he has been suffering from a grave disease of the bladder. The illustrious physiologist succumbed to a pyelo-nephritis and uremic poisoning. He died at 9 P. M., on the tenth of February, in great agony.

He was born in Saint Julien, on the Rhone, on the 12th of July, 1813. Before he found his true vocation he occupied himself, first with pharmacy, then with general literature. He had one of his comedies performed at Lyons. Then he came with a tragedy to Paris, when he was dissuaded from his plans by St. Marc Girardin. He then registered as a student of medicine, and in 1839 he became an interne at the hospital after a successful competitive examination; but the practice of medicine did not seem to furnish him that scientific satisfaction after which he aspired. In 1843 he became Doctor of Medicine; for two years previously he had already been attached to the laboratory of Magendie under the title of préparateur.

Henceforth Cl. Bernard found his true field, that of experimental physiology. He introduced there an accuracy and a precision in operation which soon signalized all of his works, and which made him indisputable master at an age when others have only a confused personality. For several years it would have been thought that he had abandoned all idea of prac-

tical medicine, and it was only in 1853, when he became Doctor of Sciences, that the illustrious physiologist renounced forever his title of surgeon.

At that period, as at the present time, or even more than it is now, the cultivation of science was intended for the promotion of material interests, and perhaps we would have had one great genius less had not the Chair of General Physiology been created by the Faculty of Sciences for Cl. Bernard. He gave his first lecture in Feb., 1854. The success of this lecture was very great; all the qualities of a great professor were united in him; a precise method; a delicate experimentalist, and an expert instructor, a habit which he acquired by filling the chair of Magendie since 1847.

From this time Cl. Bernard attained successively to the highest scientific positions. Elected in 1854 member of the Academy of Sciences in the place of P. Roux; he filled in 1855 the chair of Magendie in the College of France, and he was chief of that (Magendie's) humble laboratory for fourteen years. In Dec., 1868, he became Professor at the Museum; of the two chairs mentioned he retained that of the College of France only, in the other he installed his pupil, M. Paul Bert. The number of honorable titles increased every day; elected as a member of the Academy of Medicine in 1861; he became Perpetual President of the Society of Biology in 1867; he entered the Academy of France in 1869, replacing another great physiologist, Flourens, to whom we owe so many interesting researches on bone formation and the point of ossification. He became Commander of the Legion of Honor in 1867, and in 1869 he was promoted to the Senatorship. As he kept aloof from politics, he did not owe his nomination to his dynastic tendencies, but to the lustre which his name would give to the body of which he became a member.

The Scientific works of Claude Bernard are considerable; they comprise numerous volumes, universally known and appreciated; they are models of experimental science, which for more than thirty years have enjoyed the singular privilege to popularize physiology, making this science comprehensive to all beginners, as well as serving to the intellectual development of those who were already cognizant of his labors and who appreciated them at their true worth. It is this simplicity, clearness and precision that make the work of this great savan without an equal, a homogeneous whole, of which each part in itself, constitutes a work of sufficient merit to secure celebrity to its author.

[To be concluded next month.]

Meetings of Medical Societies.

The St. Louis Medical Society meets every Saturday Evening, at 8 p. m., at the Polytechnic Building, S. W. cor. of Seventh and Chestnut streets. DR. LOUIS C. BOISLINIERE, Pres. DR. WALTER WYMAN, Rec. Sec'y.

The Linton District Medical Society meets in Bowling Green, Mo., on Wednesday, April 3, at 2:30 p. m.

The District Medical Association of Northwest Missouri will meet in St. Joseph, Mo., on the second Thursday in April, at 10 A. M.

Essayists:—Drs. D. T. Christopher, A. Goslin, G. C. Catlett and B. L. G. Stone.

The Southeast Missouri Medical Association will meet in Perryville, Mo., on the first Tuesday in May next at 3. p. m.

The Medical Association of the State Missouri will meet in Brownsville, Saline County, on the first Tuesday in June next.

Macoupin County Medical Association meets at Carlinville, on the third Tuesday in April. DR. FRED. BROTHER, Sec'y., Bunker Hill, Ill.

Book Notices and Reviews.

CYCLOPEDIA OF THE PRACTICE OF MEDICINE. Edited by DR. H. VON ZIEMSEN, Prot. of Clinical Medicine in Munich, Bavaria. Diseases of the Nervous System and Disturbances of Speech. A. H. Buck, M. D., Editor of American Edition. Wm. Wood & Co., New York, Publishers.

The 14th vol. of this great work lies on our table. Like its predecessors it is filled with valuable papers. Some Diseases of the Nervous System, are considered in this volume, as the following:

Hemicrania, Angina Pectoris, Unilateral Atrophy of the Face, Basedow's Disease, Progressive Muscular Atrophy, Pseudo-Hypertrophy of the Muscles, Catalepsy, Tremor, Paralysis.

Agitans and Athetosis by PROF. ALBERT EULENBERG; Epi-

lepsy and Eclampsia, by PROF. H. NORTHAGEL; Tetanus by DR. J. BAUER; Chorea, by VON ZIEMSEN; Hysteria by PROF. JOLLY; and Disturbances of Speech, by PROF. A. KUSSMAUL.

To those wishing to make a special study of those diseases, the book is very valuable.

A PROGRAMME OF FREE-BODY MOVEMENTS OR CALISTHENICS FOR MIXED CLASSES. BY GUS. HANSEN AND THE. BISSING. PREPARED UNDER THE SUPERVISION OF A SUB-COMMITTEE OF THE GYMNASIUM SOCIETIES OF ST. LOUIS. Price, Fifty Cents.

In the January No. of THE JOURNAL we stated that a committee had been appointed by all of the gymnastic societies of the city, to submit to the teachers of the public schools, a plan of light gymnastics exercises. The committee have finished their work and their book is before us; it contains 31 pages. The movements of the head, neck, body, upper and lower extremities involve 295 simple and combined motions, certainly enough if vigorously executed, to develop equally the whole body.

It is easily observable that this little book is the work of teachers of gymnastic societies, for they have graduated the movements to suit the child of 8 years as well as the youth of 15.

"WHAT AM I?" A VALEDICTORY ADDRESS TO THE GRADUATES OF THE UNIVERSITY OF LOUISVILLE, KY., February 28, 1878, by PROF. J. M. BODINE.

When we reflect how much skepticism and materialism prevail in the profession of Medicine, it is refreshing to find a professor with sufficient courage and religious principle to speak to a graduating class of a Medical School such an address as this. We are thankful that some teachers of Medicine look beyond the scalpel or even microscope, and believe they are the Invisible underlying man's wonderful structure.

Books and Pamphlets Received.

On the Influence of Temperature upon the Transformation of Glycogen and Hepatic Sugar. By W. HUTTON FORD, of St. Louis. (Reprinted from the *New York Medical Journal*, January 1878.) pp. 33.

A Study of Nine Hundred and Sixty-Five Cases of Chronic Pulmonary Diseases. By F. H. DAVIS, M. D., of Chicago, Ill. [Ext'd. from the Trans. of the Am. Med. Association.

By the same Author. The Respiration of Compressed and Rarefied Air in Pulmonary Diseases. [Reprinted from the *Chicago Medical Journal and Examiner*, Oct., 1878.]

METEOROLOGICAL OBSERVATIONS.

By A. WISLIZENUS, M. D.

The following observations of daily temperature in St. Louis are made with a MAXIMUM and MINIMUM thermometer (of Green, N. Y.). The daily minimum occurs generally in the night, the maximum at p. m. The monthly mean of the daily minima and maxima added and divided by 2, gives quite a reliable mean of the monthly temperature.

THERMOMETER, FAHRENHEIT—FEBRUARY, 1878.

Day of Month.	Minimum.	Maximum.	Day of Month.	Minimum.	Maximum.
1	32.0	36.0	18	35.5	47.5
2	31.5	34.5	19	32.0	50.0
3	30.5	33.0	20	30.0	50.0
4	26.5	30.5	21	31.0	58.5
5	31.0	48.5	22	40.0	43.5
6	36.0	53.5	23	23.0	41.0
7	38.0	49.0	24	34.0	43.0
8	37.0	44.0	25	32.5	45.5
9	33.5	35.5	26	31.0	46.0
10	35.0	30.0	27	31.0	47.0
11	22.0	36.0	28	33.0	50.0
12	32.0	37.0	29		
13	37.0	45.0	30		
14	39.0	49.0	31		
15	39.5	52.0			
16	42.0	59.0	Means	34.4	46.4
17	38.5	49.0	Monthly Mean	40.4	

Quantity of rain, 1.59 inches.

MORTALITY REPORT.—CITY OF ST. LOUIS.

FROM FEB. 10, 1878, TO MARCH 16, 1878, INCLUSIVE.

Small-Pox	1	Inanition, Want of	38	Meningitis and En-	Premature and Pre-
Measles	1	Breast Milk, etc.	38	cephalitis	ternatural Birth
Syphilis, Cong'al.	2	Alcoholism	3	Convulsions	26
Scarlatina	2	Rheumatism and		Direct Effect of So-	surgical Operat'ns
Pyæmia	4	Gout	4	lar Heat	Deaths by Suicide
Erysipelas	7	Cancer	16	Apoplexy	Deaths by Acci't
Diphtheria	15	Phthisis Pulmon.	81	All Diseases of the	Total Deaths from
Membranous Croup	4	Bronchitis	21	Brain and Ner-	all Causes
Whooping Cough	4	Pleuritis		vous System	36
Erythras Fever		Emphysema		Cirrhosis of Liver	cases
Typhoid Fever	7	Pneumonia	62	and Hepatitis	11
Cerebro-spinal Fe.	4	Heart Diseases	23	Enteritis, Gastro-	Total Constitution-
Remittent, Inter-		Ancurism		enteritis, Peri-	al Diseases
mittent, Typho-		Malaria—Tabes		tonitis, and Gastro-	Total Local Dis-
malarial, Cong-		mesenterica and	11	tritis	cases
estive and Sim-		Serofida		Bright's Disease	19
ple Continued		Hydrocephalus and		and Nephritis	8
Fever	2	Tubercular Men-	6	Cyanosis and At-	Deaths by Viol'ce
Puerperal Disease	9	ingitis		electasis	4
Diarrheal	5				


CHAS. W. FRANCIS, *Health Commissioner.*

COMPARATIVE MORTALITY RATES.

CITIES.	Estimated Pop- ulation, July 1, 1878.	Total Mortality for five weeks, ending Mch. 16, 1878.	Annual Death Rate per 1000 for the five weeks.
New York	1,063,171	2,633	25.04
Philadelphia	876,118	1,540	18.27
Brooklyn	549,438	918	17.37
St. Louis	500,000*	488	10.38
Chicago	160,000	639	14.45
Boston	375,476	686	18.09

*Estimated population, May 1, 1877, 501,489.

NEW REMEDIES.

 Your Special Attention is Called to the Note Below.

QUININE FLOWER.—Used in the South during the late war, to some extent, as a substitute for quinine, and now introduced to the profession by us.

YERBA RETUA.—From the Pacific slope, now introduced by us. Used in diseases of the mucous passages, especially in catarrh, acute and chronic, leucorrhœa, gonorrhœa and dysentery.

KAYA KAYA.—From the Sandwich Islands. First introduced by us. An efficient and agreeable remedy in gonorrhœa, gleet, gout and rheumatism.

CASCARA SAGRADO.—Introduced by us. It has long been regarded by the residents of the Pacific coast as a sovereign remedy for habitual constipation and dyspepsia.

COTO BARK.—From Bolivia. First introduced by us. It is said to be almost a specific against diarrhœa in its various modifications.

COCA LEAVES.—A powerful nervous excitant, giving great vigor to the muscular system and sustaining the human frame under extreme physical exertion and fatigue.

PARAGUAY TEA.—Largely used in South America as a stimulant to sustain the system when undergoing hunger, or great fatigue during the summer heats.

GRINDELIA ROBUSTA.—From the Pacific Slope. Since this drug was first introduced by us, it has earned for itself a reputation for almost specific curative action in asthma. **NOTE.**—There are several false varieties of this plant, which are offered as genuine. Physicians will readily perceive the difference in the taste of the fluid extract, as compared with our preparation of the true plant.

GUACO LEAVES.—This valuable remedy was also first introduced by us. Its use is indicated in cholera, diarrhœa, chronic rheumatism, etc.

BERBERIS AQUIFOLIUM.—A new California drug, now introduced by us, possessing extraordinary powers as a combined alterative and tonic, and valuable in syphilitic and scrofulous diseases, salt rheum, etc.

RODOLFO LEAVES.—First introduced by us. The new South American tonic. In France it has been employed in cases where quinine could not be tolerated.

ARECA NUTS.—First introduced by us. From India. Strongly astringent. Used by Dr. Morris, of England, in the removal of tape worm.

GRINDELIA SQUIRROSA.—From California. First introduced by us. An excellent and efficient remedy in malarial diseases, enlarged spleen, etc.

YERBA SANTA.—From northern California. First introduced by us. This drug is a standard remedy in the Western States in bronchial and laryngeal disorders.

FUCUS VESICULOSUS.—First introduced by us. An anti-fat remedy of great merit. No derangement of the stomach or general system seems to result from its use.

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SOAP TREE BARK,
SANDAL WOOD,
PULSATILLA,
SUNDEW.

ESTRAGO MADIS,
MAGNOLIA FLOWERS,
ALANTHUS GLANDULOSA,
FIVE-FLOWERED GENTIAN,
NIGHT-BLOOMING CEREUS,
GRINDELIA COMPOUND,
XANTHUM SPINOSUM,
WATER FENNEL SEED,
POMEGRANATE BARK,
EVENING PRIMROSE.

DAMIANA,
BEAR-FOOT,
BROOM TOP,
COUGH GRASS,
CASTOR LEAVES,
PARSLEY SEED,
ARBORVITÆ,
CHIRETTA,
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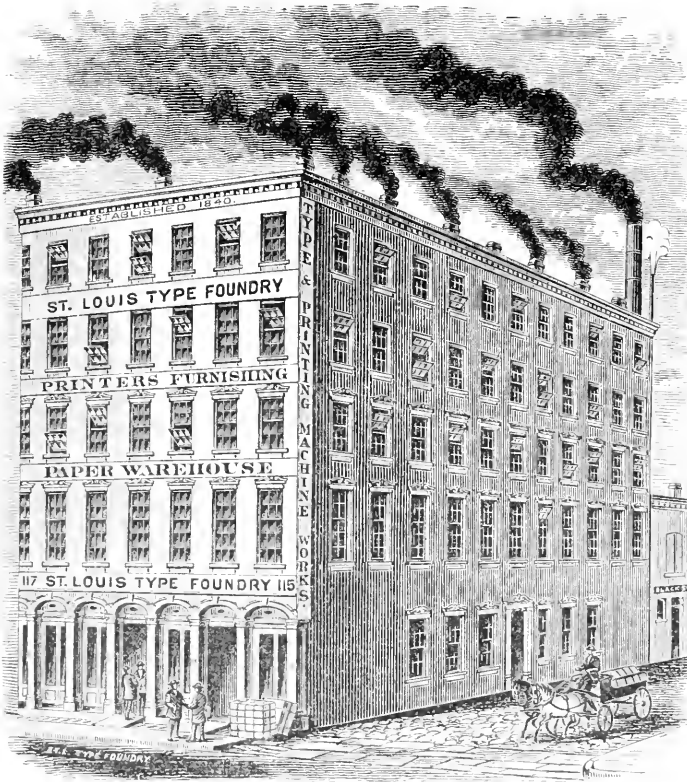
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SESSIONS OF 1877-'78.

The Collegiate Year in this Institution embraces a preliminary Autumnal Term, the Regular Winter Session, and a Spring Session.

The Preliminary Autumnal Term for 1877-1878 will open on Wednesday, September 19, 1877, and continue until the opening of the Regular Session. During this term, instruction, consisting of didactic lectures on special subjects and daily clinical lectures, will be given, as heretofore, by the entire Faculty. Students expecting to attend the Regular Session are strongly recommended to attend the Preliminary Term, but attendance during the latter is not required. During the Preliminary Term clinical and didactic lectures will be given in precisely the same number and order as in the Regular Session.

The Regular Session will commence on Wednesday, October 3, 1877, and end about the 1st of March, 1878.

FACULTY.

ISAAC E. TAYLOR, M. D.,
Emeritus Professor of Obstetrics and Diseases of Women, and President of the Faculty.
JAMES R. WOOD, M. D., LL. D.,
Emeritus Prof. of Surgery.

FORDYCE BARKER, M. D.,
Professor of Clinical Midwifery and Diseases of Women.

AUSTIN FLINT, M. D.,
Professor of the Principles and Practice of Medicine and Clinical Medicine.

W. H. VAN BUREN, M. D.,
Professor of Principles and Practice of Surgery, Diseases of Genito-Urinary System, and Clinical Surgery.

LEWIS A. SAYRE, M. D.,
Professor of Orthopedic Surgery, Fractures and Dislocations, and Clinical Surgery.

ALEXANDER B. MOTT, M. D.,
Professor of Clinical and Operative Surgery.

WM. T. LUSK, M. D.,
Professor of Obstetrics and Diseases of Women and Children, and Clinical Midwifery.

EDMUND R. PEASELEE, M. D., LL. D.,
Professor of Gynecology.

WILLIAM M. POLK, M. D.,
Professor of Materia Medica and Therapeutics, and Clinical Medicine.

AUSTIN FLINT, JR., M. D.,
Professor of Physiology and Physiological Anatomy, and Secretary of the Faculty.

JOSEPH D. BRYANT, M. D.,
Lecturer on General, Descriptive and Surgical Anatomy.

R. OGDEN DOREMUS, M. D., LL. D.,
Professor of Chemistry and Toxicology.

EDWARD G. JANEWAY, M. D.,
Professor of Pathological Anatomy and Histology, Diseases of the Nervous System, and Clinical Medicine.

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JOHN P. GRAY, M. D., LL. D.,
Professor of Psychological Medicine and Medical Jurisprudence.

EDWARD L. KEYES, M. D.,
Professor of Dermatology, and adjunct to the Chair of Principles of Surgery.

EDWARD G. JANEWAY, M. D.,
Professor of Practical Anatomy, (Demonstrator of Anatomy.)

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A. A. SMITH, M. D.,
Lecturer Adjunct upon Clinical Medicine.

A distinctive feature of the method of instruction in this College is the union of clinical and didactic teaching. All the lectures are given within the Hospital grounds. During the Regular Winter Session, in addition to four didactic lectures on every week day except Saturday, two or three hours are daily allotted to clinical instruction.

The Spring Session consists chiefly of Recitations from Text-books. This term continues from the first of March to the first of June. During this session, daily recitations in all the departments are held by a corps of examiners appointed by the regular Faculty. Regular clinics are also given in the Hospital and College building.

FEES FOR THE REGULAR SESSION.

Fees for Tickets to all the Lectures during the Preliminary and Regular term, including Clinical Lectures,	\$140.00
Matriculation Fee,	5.00
Demonstrator's Ticket, (including material for dissection.)	10.00
Graduation Fee,	0.00

FEES FOR THE SPRING SESSION.

Matriculation, (Ticket good for the following Winter),	\$ 5.00
Recitations, Clinics and Lectures,	25.00
Dissection, (Ticket good for the following Winter.)	10.00

Students who have attended two full Winter Courses of lectures may be examined at the end of the second course upon Materia Medica, Physiology, Anatomy and Chemistry, and if successful, they will be examined at the end of their third course upon Practice of Medicine, Surgery and Obstetrics only.

For the Annual Circular and Catalogue, giving regulations for graduation and other information, address Prof. AUSTIN FLINT, JR., Secretary, Bellevue Hospital Medical College.

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MEDICAL DEPARTMENT, BOSTON, MASS.

Ninety-Fifth Annual Announcement---1878-79.

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CALVIN ELLIS, M. D., <i>Prof. of Clinical Medicine, Dean.</i>	FREDERICK I. KNIGHT, M. D., <i>Instructor in Percussion, Auscultation and Laryngoscopy.</i>
JOHN B. S. JACKSON, M. D., <i>Prof. of Pathological Anatomy.</i>	J. COLLINS WARREN, M. D., <i>Instructor in Surgery.</i>
OLIVER W. HOLMES, M. D., <i>Prof. of Anatomy.</i>	REGINALD H. FITZ, M. D., <i>Assistant Prof. of Pathological Anatomy.</i>
HENRY A. BIGELOW, M. D., <i>Prof. of Surgery.</i>	WILLIAM L. RICHARDSON, M. D., <i>Instructor in Obstetrics.</i>
FRANCIS MINOT, M. D., <i>Hersey Prof. of the Theory and Practice of Medicine.</i>	THOMAS DWIGHT, M. D., <i>Instructor in Histology.</i>
JOHN P. REYNOLDS, M. D., <i>Prof. of Obstetrics.</i>	EDWARD S. WOOD, M. D., <i>Professor of Chemistry.</i>
HENRY W. WILLIAMS, M. D., <i>Prof. of Ophthalmology.</i>	HENRY H. A. BEACH, M. D., <i>Assistant Demonstrator of Anatomy.</i>
DAVID W. CHEEVER, M. D., <i>Prof. of Clinical Surgery.</i>	WILLIAM H. BAKER, M. D., <i>Instructor in Gynecology.</i>
JAMES C. WHITE, M. D., <i>Prof. of Dermatology.</i>	WILLIAM B. HILES, M. D., <i>Instructor in Chemistry.</i>
ROBERT T. EDES, M. D., <i>Prof. of Materia Medica.</i>	
HENRY P. BOWDITCH, M. D., <i>Prof. of Physiology.</i>	

OTHER INSTRUCTORS.

GEORGE H. F. MARROE, <i>Instructor in Materia Medica.</i>	EDWARD N. WHITTIER, M. D., <i>Assistant in Clinical Medicine.</i>
FRANK W. DRAPER, M. D., <i>Lecturers on</i>	
CHARLES F. FOLSOM, M. D., <i>Hygiene.</i>	GEORGE M. GARLAND, M. D., <i>Assistant in Physiology.</i>
HENRY P. QUINCY, M. D., <i>Assistant in Histology.</i>	

The following gentlemen will give Special Clinical Instruction:

FRANCIS B. GREENOUGH, M. D., and EDWARD WIGGLESWORTH, M. D., in *Syphilis*.
 JOHN O. GREEN, M. D., and CLARENCE J. BLAKE, M. D., in *Otology*.
 CHARLES P. PUTNAM, M. D., and JOSEPH P. OLIVER, M. D., in *Diseases of Children*.
 SAMUEL J. WEBER, M. D., and JAMES J. PUTNAM, M. D., in *Diseases of the Nervous System*.

Persons who hold no degree in arts or science must pass an examination for admission to this School, in Latin, in the elements of Physics, and in English. French or German will be accepted instead of Latin. The admission examination will be held June 24th both at Boston and at Cincinnati; on September 23d, at Boston only.

Instruction is given by lectures, recitations, clinical teaching, and practical exercises, distributed throughout the academic year. The year begins Sept. 26, 1878, and ends on the last Wednesday in June, 1879. It is divided into two equal terms, either of which is more than equivalent to the former "Winter Session," as regards the amount and character of the instruction. The course of instruction has been greatly enlarged, so as to extend over three years, and has been so arranged as to carry the student progressively and systematically from one subject to another in a just and natural order. In the subjects of anatomy, histology, chemistry, and pathological anatomy, laboratory work is largely substituted for, or added to, the usual methods of instruction.

Instead of the customary oral examination for the degree of Doctor of Medicine, at the end of the three years' period of study, a series of written examinations on all the main subjects of medical instruction is held at the end of each year; and every candidate for the degree must pass a satisfactory examination in every one of the principal departments of medical instruction during his period of study.

DIVISION OF STUDIES.

For the First Year.—Anatomy, Physiology, and General Chemistry.
For the Second Year.—Medical Chemistry, Materia Medica, Pathological Anatomy, Clinical Medicine, Surgery, and Clinical Surgery.
For the Third Year.—Therapeutics, Obstetrics, Theory and Practice of Medicine, Clinical Medicine, Surgery, and Clinical Surgery.

Students are divided into three classes, according to their time of study and proficiency. Students who began their professional studies elsewhere may be admitted to advanced standing; but all persons who apply for admission to the second or third year's class must pass an examination in the branches already pursued by the class to which they seek admission. The examinations are held in the following order:

At the end of the first year—Anatomy, Physiology, and General Chemistry.

End of second year—Medical Chemistry, Materia Medica, and Pathological Anatomy.

End of third year—Therapeutics, Obstetrics, Theory and Practice of Medicine, Clinical Medicine, Surgery, and Clinical Surgery.

Examinations are also held before the opening of the School, beginning September 23rd.

REQUIREMENTS FOR A DEGREE.—Every candidate must be twenty-one years of age; must have studied medicine three full years, have spent at least one continuous year at this School, have passed the required examinations, and have presented a thesis.

COURSE FOR GRADUATES.—For the purpose of affording to those already Graduates of Medicine additional facilities for pursuing clinical, laboratory, and other studies, in such subjects as may specially interest them, the Faculty has established a course which comprises the following branches: Histology; Physiology; Medical Chemistry; Pathological Anatomy; Surgery; Auscultation, Percussion, and Laryngoscopy; Ophthalmology; Dermatology; Syphilis; Psychological Medicine; Otology; Electro-Therapeutics; Gynecology; and Obstetrics. On payment of the full fee the privilege of attending any of the other exercises of the Medical School, the use of the laboratories and library, and all other rights accorded by the University will be granted. Single branches may also be pursued. Graduates of other Medical Schools who may desire the degree of M. D. at this University will be admitted to examination for this degree after a year's study in the Graduate's Course. Examination on entrance not required.

FEES.—For Matriculation, \$5; for the Year, \$200; for one term alone, \$120; for Graduation, \$30. For Graduates' Course, the Fee for one year is \$200; for one term, \$120; and for single courses such fees as are specified in the Catalogue. Payment in advance.

Members of any one department of Harvard University have a right to attend lectures and recitations in any other department without paying additional fees.

For further information, or Catalogue, address

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Arrangements have been made to obtain a supply of clinical material in the shape of lectures and hospital reports from Boston, New York, Philadelphia, and Chicago. The clinics of the most prominent men in these cities will be selected for this purpose.

Several new departments are to be introduced in the Weekly Reports on the Progress of Medicine, including Orthopaedic Surgery, Gynaecology, Venereal Diseases, Dental Surgery, Forensic Medicine, Military Surgery, etc.

The correspondence of the *Journal* has been placed upon a secure and permanent footing, able writers having been selected to discuss subjects of medical interest at all important centers. Reports of local medical societies are secured from all parts of New England; all national societies are also carefully reported.

The editorial management will be under the control of Dr. J. Collins Warren, assisted by Dr. A. L. Mason, Dr. George B. Shattuck, and Dr. C. F. Folsom. It will still be the aim of the staff to make the editorial articles equal in value to those of the best weekly medical journals. Care will be taken to supply the latest and most interesting items of medical news.

As this journal endeavors to represent the practice of the country districts as well as of cities, contributions from both sources will be gladly received, and the interests of all will be supported with the impartiality to be shown only by a journal independent of any school or faction.

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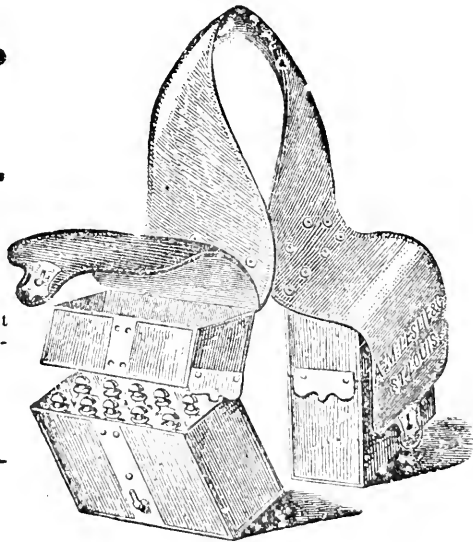
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